Service Quality
Journal

Quest for Success

Ashok K Jain, A.K. Sarkar

While an executive was watering his garden, a passing by, asked him: "Why do you water the flower buds instead of roots?". The executive answered: "I believe in quick results, I don't want water to waste time in climbing from roots to buds!" So is it with many leading companies which adopt the Balance Score Card. Success eludes them as they focus on results rather than on enabling parameters to achieve that result.

The success of Balanced Score Card depends on the objectives identified as also on the right identification of enabling factors. Therefore a new approach has come up in deploying two types of Balanced Score Card Result Oriented (Part A) and Enabler Oriented (Part B).Deployment of these Balanced Score Cards is done with the help of X-Matrix tool. The BHEL has experimented very successfully with this new model at its Haridwar Unit.

The Balanced Score Card translates a business unit's mission and strategy into tangible objectives and measures. The measures represent a balance between external measures for shareholders and customers, and internal measures of critical business processes, innovation, and learning and growth. These measures are balanced between the outcome measures- the results from past efforts and the measures that drive future performance. The four perspectives are 'Financial, Customer, Internal Business Process

and Learning & Growth.' Innovative companies are using the scorecard as a strategic management system, to manage their strategy in the long run. They use the measurement focus of the scorecard to accomplish critical management processes (Fig-1):

- clarify and translate vision and mission

- communicate and link strategic objectives and measures

- plan, set targets, and align strategic initiatives

- enhance strategic feedback and learning

At BHEL the Balanced Score Card concept has been in use from 2002-03. It is based on corporate requirements This is called BSC- Part A or unit level Balanced Score Card, whereas all excellence initiatives of the unit are separately covered in BSC-Part-B. All the functions make functional Balanced Score Card based on BSC-Part A and BSC-Part-B. The functional activities are further made part of individual performance plans.

Our experience has been that BSC-Part A is exclusively based on corporate requirements and comprises of lagging indicators, so it is basically a Result Oriented BSC. However it has been seen that all types of excellence initiatives of the unit which are enablers to these results need to be given focus separately to make BSC-Part A successful. Such initiatives are to be incorporated at functional and individual level for overall business excellence.

The BHEL Haridwar unit has developed the concept of BSC-Part B over five years whereby all types of unit level excellence or improvement initiatives are compiled. Hence BSC-Part B is basically an Enabler Oriented BSC. Action plans against stakeholders' feedback and unit's critical success factors serve as enablers to the results desired in BSC-Part A
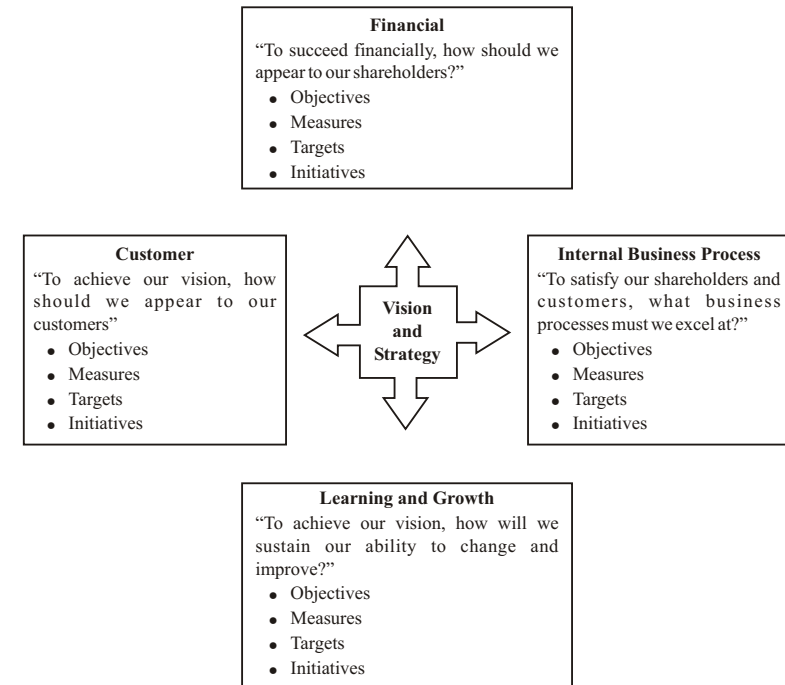

Fig. 1 : Balanced Score Card: A Farmework toTranslate a Strategy into Operational Terms

Source: Balanced Score Card by Kaplan & Norton

The Enabler Oriented BSC (Part B) is also divided into four perspectives as in case of Result Oriented BSC (Part A). All the targeted results and enabling issues of BSC-Part A & B are cascaded down to functional level BSC followed by sectional level BSC and individual map. BSC-part B also clearly identifies responsibility and target against each initiative. Weightage given against each initiative is informative only when it indicates importance of the initiative in organizational level.

Relationship between Result Oriented BSC (Part-A) and Enabler Oriented BSC (Part-B): An Illustration (Fig-2)

The objectives of BSC-Part A are linked to BSC-Part B. Fulfillment of BSC-Part B parameters lead to fulfillment of results

targeted in BSC-Part A. Hence BSC-part B parameters are leading indicators whereas BSC-Part A parameters are lagging indicators in nature. Fig-2 shows some examples on relationship between parameters of BSC-Part A and Part B.

Perspectives	Results : BSC-Part A	Enablers: BSC- Part B
Financial	1. Growth in Turn over by 20% 2. Growth in EVA by 15% n.	♦ Implementation of new incentive scheme ♦ Procurement and Commissioning of identified new machines for increased production
Customer	1. Commissioning of identified projects as per schedule 2. Reduction in customer complaints n.	♦ Action Plan to improve Delivery Index of supplies ♦ Project Ownership concept by Senior Executives ♦ Implementation of Web Based Project Monitoring System
Internal Business Process	1. To achieve 600+ score in TQ assessment by CII 2. To improve Quality Mgmt Effectiveness score by 10% 3. To improve Employee Satisfaction Score by 20% n.	♦ Implementation of identified TQ Initiatives as per BSC-B ♦ Implementation of QMER action Plan ♦ Conducting ESS and implementing ESS Action Plan
Learning & Growth	1. To file 20 patents 2. To improve efficiency and reduce heat rate of 500MW turbines n.	♦ Projects Identification and completion ♦ Carrying out Benchmarking Project

Note: Detailed Functional Action Plans are made to fulfill BSC objectives

Fig. 2 : Development and Cascading of Balanced Score Card

To make effective cascading of higher level objectives, strategic issues, challenges and establishing proper linkage, the concept of X-matrix is used at unit level while formulating unit and functional level Balanced Score Cards. Issues of BSC-A and B are cascaded effectively through X matrix to different functions, section and individuals (Fig-3).
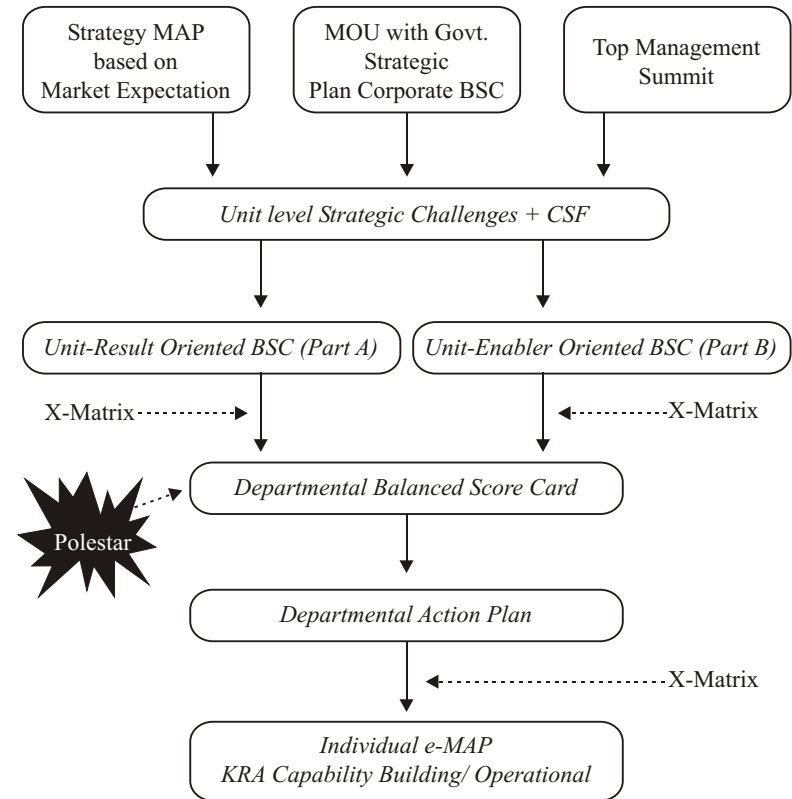

Fig. 3 :Cascading of Strategy

The development process of Balanced Score Card is explained in Fig-4 where interface with various functions at corporate level and review mechanism are shown.
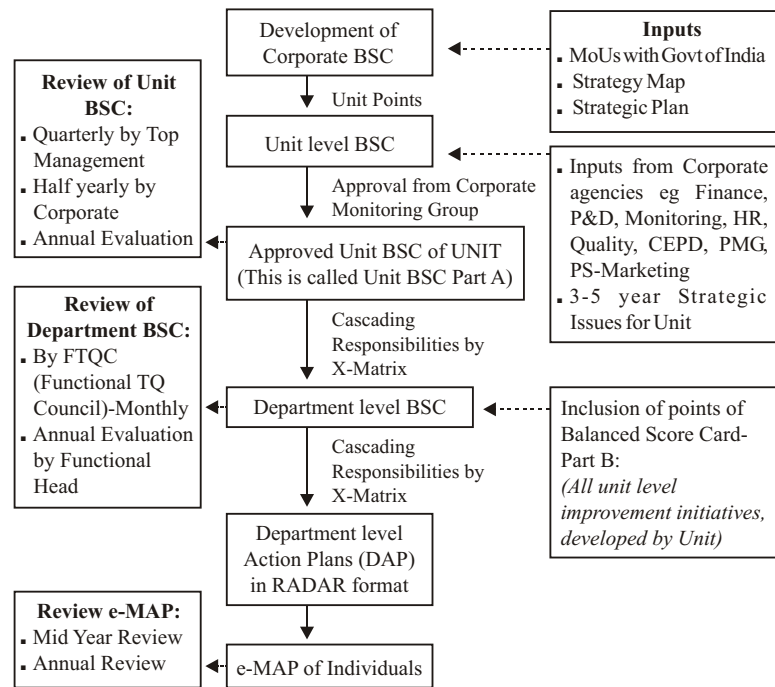
Fig. 4 : Development of Unit Balanced Score Card & Action Plan

Fig-5: Top Level Strategy Deployment-Cascading
Balanced Score Card

The cascading of BSC through X-matrix up to individual level ensures effectiveness of Result Oriented BSC as committed at the highest level. It ensures step by step cascading of higher-level objectives of Result & Enabler BSC by assigning responsibilities- primary or secondary. Assigned targets are pursued through action plans. For this unit level X-matrix (1st Level) is drawn first (Fig-5). Apart from unit level X-matrix (1st level), all resource functions make their X-matrix incorporating functional balanced score cards. It basically gives relationship between WHAT-HOW-HOW MUCH/WHEN-WHO.

While making Functional level X Matrix (2nd level), the unit level primary responsibilities of the function are cascaded to formulate functional Balanced Score Card, their targets and action Plan. Further responsibilities down the line are provided, which are

linked to individuals performance plans. Thus X-Matrix helps in converting an organisation's long term objectives to the annual improvement plans in the form of Balanced Score Card and cascading the objectives of Balanced Score Card down to the individual level. This helps avoid ambiguity in policy and strategy deployment and effectively puts in place strategic plan, quality policy, business policy, critical success factors throughout the unit to handle the strategic challenges and setting SMART targets.

The success of deploying both Result oriented and Enabler Oriented Balanced Score Cards at one unit has led to their implementation in other units of the organization. In our quest for success, it is important to focus our resources and energies to the enabler processes which will deliver the planned results. This has given a new dimension to Balanced Score Card approach which has successfully implemented at BHEL, Haridwar.

A. K. Jain, Executive Director, Corporate Quality, BHEL
A.K. Sarkar, Sr. DGM, Corporate Quality, BHEL

TQM and Growth at Visakhapatnam Steel Plant

K.U. Gupta, Syed Ali Hussain

Visakhapatnam Steel Plant (VSP), a corporate entity of Rashtriya Ispat Nigam Limited of Visakhapatnam is the first integrated steel plant in the country to get: ISO 9001 (Quality Management System), ISO 14001 (Environment Management) and OHSAS 18001 (Occupational Health and Safety Management System).

This has been good for the morale of the employees as well as for the corporate image of the organization. Our environmental friendly and minimum polluting processes have been appreciated by regulatory bodies The organization's commitment to providing a healthy and safe environment, for all those who work for it and its environs have won the cooperation of all interested parties, in accomplishing its objectives and targets.

We have been successful in gaining the confidence of our customers and are far ahead of our competitors in many areas. The demand for our quality products has increased our net profits and our market share. The after sales service of VSP was much talked off in various forums including the surveys conducted for the award of the prestigious Prime Minister's trophy.

In today's economic turbulence, with increasing globalization and a highly competitive environment, just meeting customer requirements and complying with the international standards is insufficient. Some extra efforts have to be put in to enhance specific competencies of business and win over the competitors. The entry of private players and the lessening of government controls have opened new vistas in quality, timely delivery of products/services to customers. To improve product and service acceptability, innovations through brain storming, involvement of employees, bench marking through success stories, building skillful and competent human recourses through training and development as well as customer-benefit oriented activities, need to be addressed.

VSP aims to overcome external barriers by enhancing internal strengths, acting on the weaknesses, grabbing opportunities with an eye upon threats. To accomplish these endeavors the management embarked upon fulfilling the following objectives :

- mechanism to develop understanding between interrelated departments in order to implement internal customer satisfaction concept to be established.
- developing mechanism to deal with the quality improvement activities for continual improvement of the processes, quality of products & services.
- developing an inbuilt system for involving the employees.
- developing software for -
  › digitization of QMS, EMS & OHSMS documents and making them available in the company's intranet, online, in phased manner.
  › facilitating customers to lodge online customer complaints via internet.
- facilitating employees to feed the suggestions and quality circles online.
- developing menu based online module.
- develop a mechanism to reduce firefighting, resulting in more time available for innovation and creativity.
- strategy for customer delight.
- develop process maps in line with key business processes
- implementation of 'Five S' in a phased manner.
- implementation of six sigma concepts and taking up projects.

SETTING THE SCENE

The following pre-initiative activities for complying with the planned objectives and targets were initiated :

- inter departmental teams were constituted to identify quality parameters required by the customer department from the supplier departments

- the TQM committee was engaged to formulate the structure for implementation of the quality improvement projects

- TQM group was made responsible to work on developing a web based software for posting the apex manual, work procedures etc; on Intranet for easy access by all departments in the organization their by reducing paper consumption and becoming more environmental friendly.

- employee involvement programs viz; suggestion schemes and formation of quality circles, which were in vogue in small scale, were to be studied and a methodology to be worked out by management services group to improve employee involvement.

- departmental action teams for cutting production cost, productivity enhancement through continual improvement of the processes, quality of products & services were constituted.

- Maintenance management group were given the responsibility to study and develop mechanism to reduce firefighting and device effective maintenance programs.

- marketing groups headed by regional managers were formed to plan strategies for maximizing customer satisfaction

- marketing customer relations group was made responsible to develop computerized customer complaints system for easy navigation through internet with the help of Information technology group.

- consultant from QCFI was engaged in training and helping VSP to implement 'Five S' throughout the organization.

- 'M/s SMG consultants' was engaged for training in concepts of six sigma. M/s Omnex was engaged for implementation. Teams for taking up projects in various departments were constituted.

- departmental teams were constituted for developing process maps of core processes. CII was engaged for training.

THE EXPERIENCE

- interrelated processes are the part of the integrated steel plant. Since, the working of all the production units are interdependent in an integrated steel plant, the process interactions were identified and internal MOU system was developed for implementing internal customer satisfaction concept. MOU's were signed between the customer department and supplier department. Various quality parameters are set and these are monitored on a daily basis for deviations and corrections. Based on the performance of the supplier department, ratings are awarded. The performance of the departments is reviewed in the management reviews and suitable decisions are taken for improvement.

- number of activities for improving the operation of processes, were to be performed in order to improve the quality of the product and services. In order to accomplish this, HODs of different departments along with TQM group identified quality improvement projects in their respective areas. These projects are with quantifiable & measurable targets. These improvement projects are called quality improvement projects and the teams to execute these projects are known as quality action teams. The proposed project for improvement is submitted by respective HOD, to HOD. The proposed QIPs are scrutinized by TQM Head and sent for approval of chief executive to start the improvement cycle. FADE (focus, analyse, develop and execute) cycle is adopted by the quality

action teams for implementation of quality improvement project. A monthly progress report is submitted by the team leader through HOD concerned to HOD (TQM) who in turn presents the summary of all these reports graphically, in the management review meeting. After the completion of the project, the QIP implementation status is observed for a period of 6 months to monitor the results achieved and the status report is submitted through respective HOD to HOD (TQM)/ Chief MR / Chief Executive QMS. After successful implementation of the project, necessary additions/ revisions are carried out in system documents.

- TQM group in association with IT department developed a web based portal in the companies intranet, for uploading QMS documents. The documents & data stored in this portal was accessible even at the marketing regional and branch offices spread all over the country. The documents which were maintained in hard copies in various locations were now fed into the TQM portal. This was accessible through the intranet network available inside the plant and also at outstation marketing offices through dedicated network link. Top management commitment towards IT infrastructure development was evidenced in providing resources for acquiring additional computers and intranet network. All the documents of quality management system were successfully uploaded to intranet. The portal administration was vested with head of TQM in order to edit and reload the documents.

- management services group conducted different programs to get suggestions from the employees. Attractive monetary benefit schemes were introduced, (viz; instant money for each suggestion during the suggestion mela. Constituting award for highest number of suggestions, rich rewards for good suggestions, and nominating best suggestions to various competitions and widely publicizing the best suggestion etc.) to enhance employee involvement.

- quality circles were the outcome of the implemented suggestions and also innovative or creative work performed to improve the process, procedures, product, service, customer satisfaction, safety, quality, savings etc; Management services group devised programs for motivating employees to actively participate in problem solving activities. Inter-departmental competitions were held to induce a sense of competitive spirit among the QC groups. The best groups were suitably rewarded and to encourage them even further by nominating a set of QC's to national and international conventions. Training sessions were conducted to inculcate a sense about various uses and benefits of QC tools in arriving at the root cause through data analysis, developing an appropriate solution, implementation and checking the effectiveness of implemented project (PDCA Cycle). The group has also developed oracle based software with the help of information technology department to enable employees to feed suggestions and quality circles online. Now, at VSP the suggestions and quality circles are fed by the employees online and the status is maintained in the server.

- departmental action teams such as departmental energy team, departmental safety committee, shop floor coordination committee etc were constituted to study and implement the measures to cut production cost, enhance productivity by improving yield, study and implement continual improvement of the processes, quality of products and services.

Reviews were conducted with the various action teams at the HOD level and also at head of works level. The various designs modifications were suggested, implemented. Operational procedures were modified to save energy and water consumptions. Corrective and preventive measures have been taken to reduce wastages. Addition, modification or replacement schemes were implemented to do away with less efficient and outdated equipment and replaced with latest state of the art technology equipment.

- maintenance management group designed oracle based software with the help of IT department titled 'Maintenance Management System (MAMS)'. The bill of quantities data of the equipment required for maintenance activities was fed by various departments into the data bank of MAMS. The software modules developed for preventive maintenance, predictive maintenance, breakdown maintenance were implemented and also brought into quality management system. The advantage of this is the spares requirements for the type of maintenance for particular equipment is provided, which includes the requirement of tools and tackles. It enables maintenance group to refer to its previous history record to focus on critical points during maintenance. The fulfillment reports, mean time between failures and mean time to repair are generated automatically. The data through out the plant could easily be monitored and quick decisions could be taken.

- marketing groups headed by regional managers conducted a marathon of customer meets in their region to learn from the customers their requirements and difficulties faced during usage of our product. The top management participated in these meets and took decisions to resolve the issues raised by customers. Marketing branch offices introduced a teller counter, where in the information required by customers was delivered instantaneously telephonically or personally. Exhibition and display of VSP products in trade fairs was never missed as this provided opportunity to educate the end users about the importance of quality in their business.

- marketing department's customer relations group with the help of information technology group developed online customer complaints system. With the implementation of this, customers are easily communicating their complaints and feedback about the product performance. This system is enabling VSP to resolve the majority of the complaints within 30 days.

- 'Five S' is a concept, which forms the basis of all activities being undertaken during daily operations in the work place management. 'Five S' was implemented in VSP in a phased manner. Each department prepared the manual, do & don't's, standard practices etc; frequent audits, reviews were conducted to streamline the work place management system. Consultant from QCFI was engaged in training and helping VSP to implement Five S throughout the organization.

- six sigma concepts were also taken up. Awareness programs were arranged by engaging M/s SMG consultants from Tuticorin. Teams for taking up projects in various departments were constituted under the guidance of the consultant. Total of 64 projects were taken up of which 18 under black belt category and 46 under green belt to cover all the potential improvement areas. All these projects were supervised under the guidance of champions trained by the consultant. A total of 13 champions were trained for identification and implementation of 6 sigma projects. The projects were monitored weekly by the champions and reports were reviewed by the committee along with the consultants. The consolidated report indicating the progress and potential benefit achieved is appraised to the top management. Of the 48 green belt category projects, 17 nos of successful projects and 8 nos out of 18 black belt category successful projects were awarded six sigma certificates.

- the application of a system of processes within an organization, together with the identification and interactions of these processes and their management, can be referred to as process approach. Identification of key process control parameters, fixing frequency for monitoring and review and fixing responsibility for monitoring and review for efficient control of processes were taken up. Process management group was established consisting of departmental representatives for developing process maps of core processes. CII was engaged for training the departmental representatives. The process mapping of 21 core processes were planned initially of which 19 core processes mapping have been done.
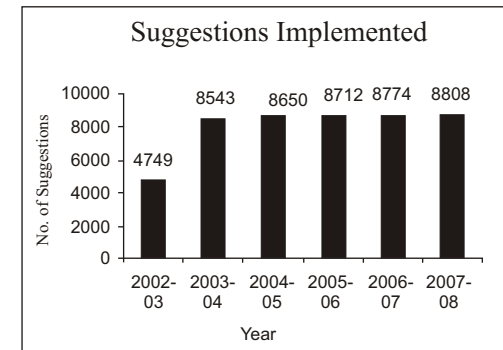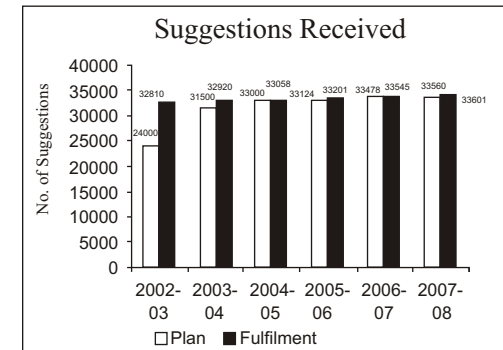
OUT COME AND IMPACT

- the adoption of MOU system was highly rewarding. The parameters were monitored on a daily basis and deviations from agreed parameters were controlled. The internal customer satisfaction was measured from the ratings awarded by the customer departments to the supplier departments. The review of the satisfaction levels in the management review meetings of QMS impacted the performance of the supplier departments in delivering the quality output to the customer departments. The intention of the top management to introduce the internal customer satisfaction concept so as to ensure stringent quality control measures has been fully met.

- 533 Quality improvement projects were implemented so far saving 246.19 crores for the organization. Details are given below :

Cycle & Year	No.of projects	Projected Savings Cr.	Total Saving achieved Cr.
A (1997-1998)	62	32.5	32.33
B (1999-2000)	62	20.93	18.5
C (2000-2001)	58	26.56	35.68
D (2001-2002)	49	29.00	67.03
E (2002-2003)	63	52.37	40.65
F (2003-2004)	59	14.87	22.3
G (2004-2005)	55	9.28	6.00
H (2005-2006)	51	6.71	7.70
I (2006-2007)	47	30.37	8.0
J (2007-2008)	27	15.7	8.0
Total	533	Total	246.19

- all the documents of quality management system were successfully uploaded to internet. The additional infrastructure requirements of the departments were met. The hard copies documentation has been completely wiped out.

- the suggestion schemes and quality circle has become, a tool for total employee involvement, a problem solving process, a means to tap creativity and innovation, a team building process, a tool for bringing continuous improvement, an opportunity for learning and sharing and totally a culture for participation and growth in VSP.

ACHIEVEMENTS

Suggestion schemes

Suggestions Received

Suggestions Implemented

FINANCIAL SAVINGS

Quality Circles

% Employee Involvement

SAVINGS (Rs IN LAKHS)
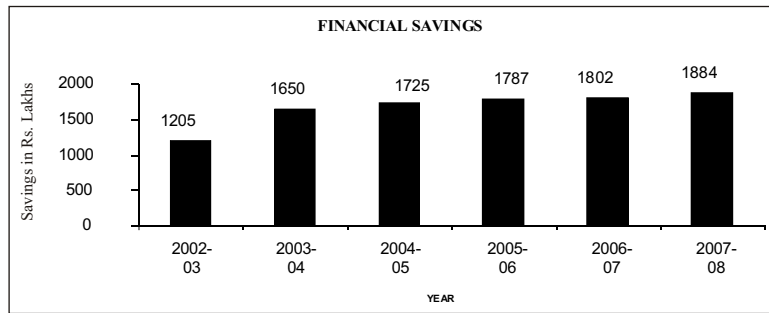
QC PROGRESS
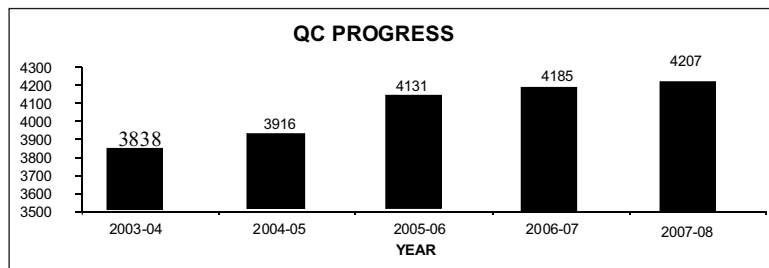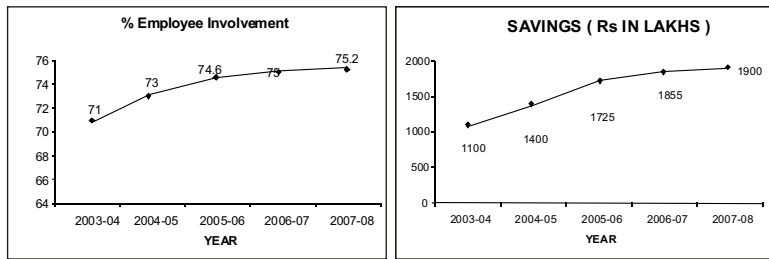
- the outcome and impact of efforts put in by the departmental Action teams such as departmental energy team, departmental safety committee, shop floor coordination committee etc; could be visualized from the following performance indices.

Performance Indicators

Turn Over in Rs Crs

Gross Margin in Rs Crs

Special Steel Production in Lakh Tones

Consistent improvement in Sales, Production of Special Steel Grades
Margins were higher before the current spike in raw-material prices.

Concern for Environment

Water Consumption in Cum/Lts

Better than
Tata Steel - 6.62 (06-07)
SAIL   - 4.00 (07-08)

Ambient Air Quality - Emission in Micro gram/ N Cum

RINL has been most alive to environment concerns

- Re-circulation of water almost to complete extent by continual augmentation of treatment facilities
- Will reach zero discharge through augmentation of MBC effluent treatment plant sanctioned under Mini-Ratna powers

R&D Efforts

Sponsored R&D :

Projects	Benefit
• Utilization of Industrial By-product Fly Ash in concrete pavement	Pilot coke oven shed floor made using Fly Ash
• Bio-remediation of Ammonia from effluents of VSP	Lab scale experiment showed encouraging result
• Investigation of Muck generation in the process of crude benzol recovery	Improving Efficiency
• Microbial Phosphorus removal from LD slag	Increased recycling LD slag

R&D Efforts

Sponsored R&D :

Projects	Benefit
• Modeling and simulation of LMMM reheating Furnace	To increase the efficiency of the furnace
• Briquetting of solid metallurgical wastes	Waste utilisation and cost savings
• Removal of CO_2 from flue gases	Environment protection
• Improving the yield and metallurgical performance of 4 strand Bloom Casting Tundish through water moulding	Improving yield and steel quality

Techno-economics

RINL is more energy efficient than its competitors

The specific energy consumption of RINL shown below in G Cal / tcs in much below
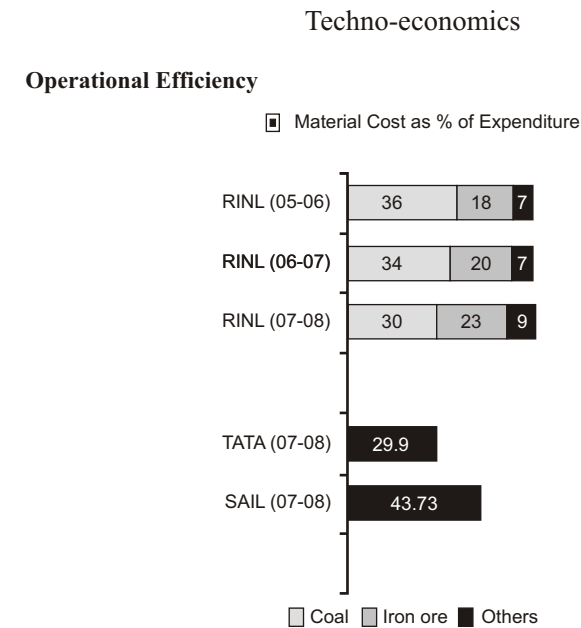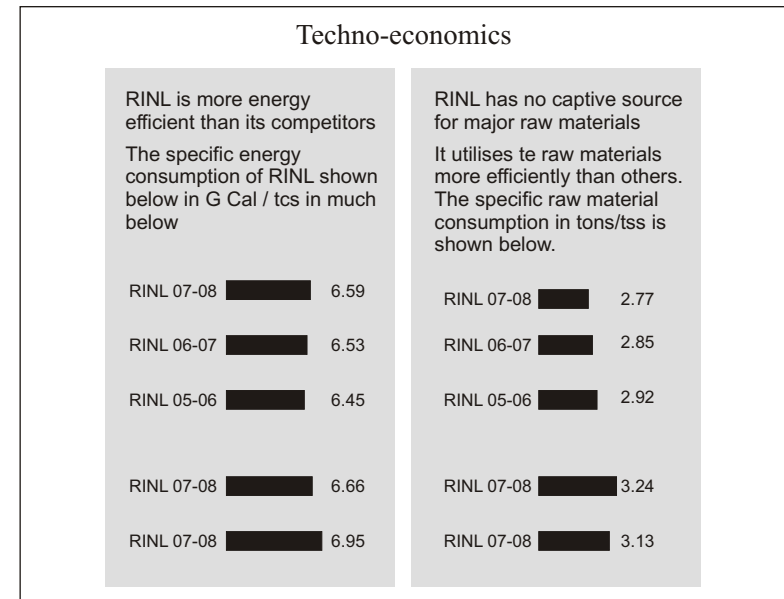
RINL 07-08	6.59
RINL 06-07	6.53
RINL 05-06	6.45
RINL 07-08	6.66
RINL 07-08	6.95

RINL has no captive source for major raw materials

It utilises te raw materials more efficiently than others. The specific raw material consumption in tons/tss is shown below.

RINL 07-08	2.77
RINL 06-07	2.85
RINL 05-06	2.92
RINL 07-08	3.24
RINL 07-08	3.13

Techno-economics

Operational Efficiency

▣ Material Cost as % of Expenditure

	Coal	Iron ore	Others
RINL (05-06)	36	18	7
RINL (06-07)	34	20	7
RINL (07-08)	30	23	9
TATA (07-08)	29.9		
SAIL (07-08)	43.73		

☐ Coal ▨ Iron ore ■ Others

Techno-economics

Operational Efficiency

▣ In spite of paying much more for Raw Material, RINL has better margin than SAIL

Gross Margin as % of gross sales

RINL   SAIL   TATA

CRU International Report (2004)

Figures as per CRU report in US$ / ton (except 07-08 RINL from internal data)

CRU London made Long Product Cost study in 2004 in 50 steel plants world wide

In the costs up to liquid steel shown opposite, RINL was in top 5 lowest cost producers of the world

With out captive raw-material source. RINL would not be in top five now

Delegation to RINL to invest in mines could alleviate the impact of raw material price rise.

RINL was lowest in costs excluding raw-material

■ Rawmaterial Cost   □ Other Cost

- maintenance and management system modules provided the departments with an effective tool to systematically execute the maintenance jobs as per schedule. The ease in procedures had positive impact in the work environment. The time bound execution of maintenance jobs brought down the breakdowns and provided equipment for improving productivity, reduction in energy etc;

- the top management commitment to thrill the customers by providing the product and service beyond their expectations could be felt with reduction in customer complaints and increase in repeat orders.

- the online customer complaints module hosted on the internet became a major tool for the customers to post their complaints freely. This quality initiative was lauded by the customers. The customer could at his leisure post the complaint without approaching the VSP offices. The scheme also facilitates VSP for speedy communication and quick action to close the complaint to the entire satisfaction of the customers. The IMRB international conducted study for ministry of steel government of India, covering all integrated steel plants in India, for the year 2006-07, adjudged RINL-VSP as follows:

  › RINL continues to have highest overall customer satisfaction with 87%.

  › RINL continue to have a good base for word of mouth publicity with 93%

  › for RINL Customer satisfaction of 91% with technical specification

  › customer satisfaction with timely delivery, of all the plants has gone down except RINL

  › for RINL- Improved customer satisfaction of 85% in relation to Stock yard facilities.

  › RINL has been adjudged as best in terms of Quality of products, pricing, adherence to delivery schedules.

- implementing Five S has changed the very face of the organization. The House keeping has tremendously improved.

The sense of cleanliness developed within the employee fraternity. The shop inventory maintenance improved.

- of the 48 green belt category projects, 17 successful projects and 8 out of 18 black belt category successful projects were awarded six sigma certificates.

- the process mapping of 21 core processes were planned initially of which 19 core processes mapping have been done. This had an excellent impact on the working conditions and ease of procedures for operating the process on the whole. Personnel understood the importance of monitoring the various parameters and the potentiality of disaster that could be averted by critically adhering to the requirements.

LESSONS LEARNT

- the MOU's adopted for internal customer satisfaction should be objective in awarding the ratings for achieving sustained/ improved performance.

- quality improvement projects are the needs for improving the system and imbibing new technologies for achieving an edge over the competitors.

- in the organization, employees should be developed to own the responsibility by involving them in decision making processes during implementing changes for the benefit of the organization.

- each and every employee should be aware of the consequences of depletion of natural recourses and the impact it has on the future generations to come.

- cutting production cost and continual improvement should be the permanent objective of any organization

- innovation and creativity are resources vested in every individual. The art of extracting   them for the benefit of the organization need to practice.

- customer to be handled with care.

- practice Five S principles every where and inculcate children also.

- good community of practices to be developed to share and mutually strive the difficult task by brain storming.

- unsafe and unhealthy practices to be identified and discontinued.

ACCOLADES AND AWARDS IN 2008

- enterprise Excellence Award for 2007 by IIIE May
- accolades at INSSAN convention Feb
  - three Merit awards, One Silver medal
- Viswakarma Rashtriya Puraskar 2007 Seven awards Sep
- International QC Award for two teams Oct
- QCFI-NMDC Trophy for Best QC implementing company - Nov

PRESENT SCENARIO AND FUTURE PLANS

Present Scenario

The recent global financial crisis and the resultant melt down cast its shadow on many organizations. VSP is no exception to experience the hardest times such as drastic fall in the steel prices in the shortest duration compounded by an increase in raw material prices, for ex; coal up to 300%.

VSP's cumulative sales drooped form the month of Sept. 08 and the net profit also traced a downward trajectory.

VSP at market place - Sales
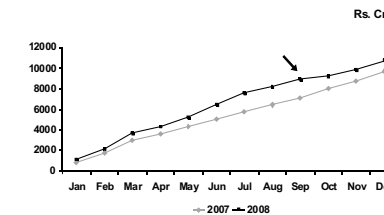
VSP at market place - Net Profit
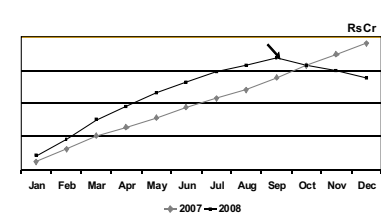
The factors that affected VSP's performance in recent months

- prices for imported coking coal, iron ore fines, ironore lumps were at all time high in 2008 as compared to 2007. (Fig-1)
- steep fall in international steel prices since july'08 (Fig-2 & 3).
- restricted buying by customers who adopted a wait and watch attitude.
- stock buildup became inevitable due to slack in demand, falling prices and uncertainty. (Fig-4)

(Fig-1)

(Fig-2)

(Fig-3)
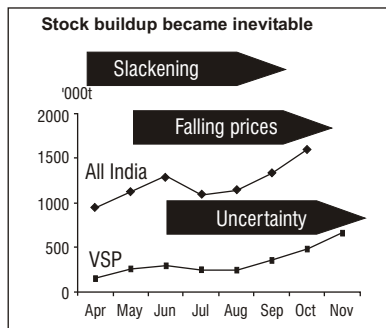
(Fig-4)

Future Plans and strategies for overcoming the present gloomy situation

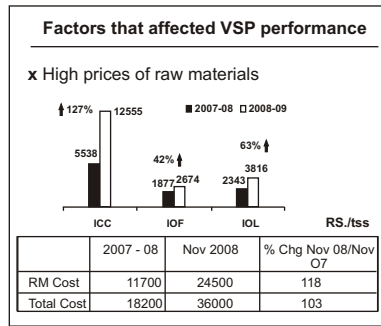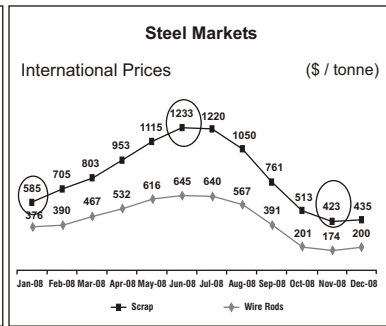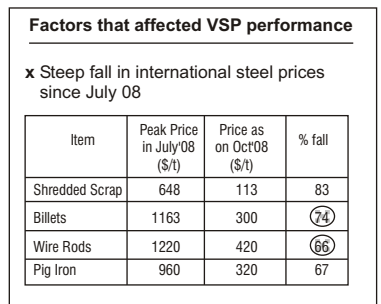- productivity enhancement through targeted improvement projects for operational efficiency
- cost reduction by initiatives for improving energy consumption, raw material consumption etc.
- re-scheduling capital repairs in view of changed market conditions and projections
- evolution and implementation of comprehensive maintenance strategy
- system improvements with focus on outcomes
- tactical interventions to liquidate stocks. Optimizing realizations and Clearance of high cost inventory.
- aggressive and intensive marketing
- negotiations for existing contracts and staggering of supplies
- ensure long term security for raw materials through strategic investments
- identification of desired cultural shift and development of systems to implement the same
- focused approach in R&D to reduce costs, improve efficiency, waste recycling etc.
- identification of constraints, action plans,
- implementation and reviews to meet expansion schedules

Challenge of down trend will tend to magnify relative strengths and weaknesses in the organization .The VSP collective can face any type of crisis and bounce back to the fore front. VSP has learnt to rise through hard work and optimism. It has learnt to convert the threats into opportunities and weaknesses to strengths which have been proved time and again.

Actions already initiated

- it may be noted here that where most of the players in steel industry are receding from investment in expanding capacities, VSP top management has decided to expand its capacities to

7.5 million tons with additional 3rd converter and 4th caster by 2012.

- taking the opportunity of ongoing recession period, VSP is in no mood to panic but to utilize the time given by nature to meticulous plan for a roll on with total involvement and intense communication, looking for converting crisis into opportunities such as adding, modifying, replacing and utilize the lean period to reschedule the maintenance activities and take care of the aging equipment so that the rejuvenated machinery can reap the fruits for many more years to come.

- the top management believes that TQM creates ample opportunities at times of managing the situation that is untraditional, unconventional. TQM group has already been pressed into action to redefine the policy and objectives for speedy fulfillment of planned activities. The theme based auditing techniques to be introduced with increased frequency of management reviews, apart from concentrating on corrective and preventive measures to bring about continual improvement in production processes, maintenance processes etc;.

The maturity level of quality management system has grown such that it no longer persists on traditional way of thinking and traditional way of solving problems.

VSP always refers to its core values at times of crisis and obtains the direction to stress more on the Innovative and creative ways and means to bring about solutions in the field of producing quality steel to the customers delight.

K.U.Gupta
Dy. General Manager(TQM), VSP

Syed Ali Hussain
Sr. Manager (TQM), VSP

MECON Limited
- A brief of QMS Implementation

J. Mathew, Sanjeev Kumar

THE CONTEXT-BRIEF HISTORY OF ORGANISATION

Over sixty years ago, when India began its 'tryst with destiny' the founding fathers of the nation envisioned a strong and prosperous country with Industry as its bedrock. They had the foresight that true independence can only through an industrial revolution. This new spirit of nation building led to the setting up in the 1950s of mammoth industries across the country. Indeed they were to become the 'temples of Modern India'.

Steel was the bedrock of this industrial surge and, accordingly, our planners mobilized vast resources to develop integrated capability and self-sufficiency in iron & steel manufacturing. It was to make a success of this endeavor that MECON was born to provide consultancy and engineering services. Ever since, MECON is a key player in India's industrial progress.

MECON is headquartered at Ranchi, in Jharkhand State, snug in the heart of the steel and coal belt in eastern India. It is now the biggest consulting engineering company in India with a presence in all metro locations and steel plants locations of Steel Authority of India (SAIL) and Rashtriya Ispat Nigam Limited (RINL). Ranchi apart, Bangalore and Delhi are the main Engineering offices. There is no other consultancy firm comparable to MECON in size, scope of stature in the core industry of iron and steel, non-ferrous metals, power, oil & gas and infrastructure. It has operations overseas as well.

MECON is government owned but this has not come in the way of it from undertaking valuable assignments competitively from the private sector too.

Starting out as a small bureau of the first public sector steel company, Hindustan Steel Limited, MECON has turned itself into a dynamic, vibrant and for many years a consistently profit-making company directly under the jurisdiction of the ministry of steel in the government of India.

Apart from being a consultant to ferrous and non-ferrous industries, power sector, petroleum and other chemical industries in the public sector and private sector, MECON has to perform the delicate task of being a consultant-adviser to the government of India on the technical front. This work involves the evaluation of project locations and reports, both from Indian firms and foreign collaborators. It has to undertake projections of market demand and supply and fiscal viability.

CONSULTANCY CAPABILITIES

To get a clear understanding of MECON's perceptions, one must look into the various stages in the commissioning of a typical integrated steel plant.

Broadly, these are:

Stage I :   Market study, demand forecasting and selection of product mix, raw materials analysis and linkages, site selection and soil investigation and infrastructure assessment.

Stage II : Technological process selection and design and preparation of techno-economic feasibility report/ detailed project report, including basic design drawings for the main production units.

Stage III : Detailed design and engineering of individual shops and inter-connected facilities within the plant parameters. This includes preparation of working drawings for civil, structural, electrical, mechanical, instrumentation, piping, railway track and signaling.

Stage IV : Supervision of construction and erection, project management and commissioning assistance.

BUSINESS OPERATION

MECON has till date completed over 3500 consultancy and EPC assignments. It is registered with International financial Institutions like World Bank, Asian Development Bank, European Bank of Reconstruction and Development, African Development Bank, United Nations Industrial Development Organization etc. MECON's range of services includes:

- pre-investment investigations
- market survey & product mix selection
- planning, analysis, reports, assistance in financial approval by financial institutions.
- basic & project engineering
- detailed engineering
- procurement & contracting services
- inspection & expediting
- construction & project management
- commissioning & post commissioning services
- computerisation & industrial automation
- software design & development
- health studies, asset evaluation, restructuring
- engineering services for plant relocation and refurbishing
- training
- design, development & supply of equipment & system
- engineering, procurement and construction (EPC) services
- environmental Impact Assessment (EIA)/Environmental Management Program (EMP) reports
- residual Life Analysis (RLA) studies

MECON's areas of activities are:

- iron & steel
- non-ferrous metals like aluminum, zinc, copper, lead etc.
- coal carbonization, chemicals
- power plant and energy engineering
- hydro engineering & water management
- ports and harbours
- environment engineering
- material handling
- roads & highways
- architecture and town planning
- oil & gas …

Down the years, the company has developed expertise in turnkey execution of projects on single point responsibility basis. It has grown in stature in the sector of engineering consultancy and project management. It is the first engineering and consulting organization in the country to be certified with ISO 9001 (now ISO 9001: 2000) by RWTUV of Germany.

THE OPPORTUNITY/PROBLEM

- the scenario before implementation of Quality Management System (QMS) was lacking synchronization among different departments of the organization. A major impediment was the lack of synchronization between various departments.
- being an engineering consultancy organisation the assignment flow among different technological & engineering services groups needed more standardized practices MECON's management thought of implementing ISO 9001 QMS as a chance to bring about these improvements.
- engineering consultancy organisations like MECON need to benchmark different processes to bring about system improvement.

- during 1990's, while quoting for jobs, many organisations specified ISO 9001 certification as eligibility criteria.

AIM, GOAL(S) AND OBJECTIVE (S)

MECON's Top Management got involved in evolving the 'Vision' statement and 'Quality Policy'.

MECON's VISION

"Developing into an internationally recognized centre of excellence for providing quality services in technical consultancy; design and engineering; design and supply of plant; equipment and systems; project implementation from concept to commissioning for industrial development and up-gradation ventures; development of infrastructure as well as other service sectors"

THE QUALITY POLICY OF MECON

"To function as customer focused organization, providing globally competitive value added consultancy, engineering, turn-key execution and project management services"

Top management commitment was evident with their involvement in framing the corporate quality policy and translating it into quantifiable quality objectives. The objectives, set every year, are closely monitored through management reviews at regular intervals.

SETTING THE SCENE: QUALITY MANAGEMENT SYSTEM JOURNEY

In the year 1993, MECON management decided to further consolidate and refine its service capabilities by adopting total quality management principles and implementation of Quality Management System (QMS) as per ISO 9001. A core group was formed to interact with apex body CII (Confederation of Indian Industry) and focus on improvement initiatives leading to better consultancy services and consistent practice.

Such initiatives are always top driven. In our case it got support and helped the core group to involve people at all levels in the organization to contribute in further streamlining the processes and practice.

While setting the quality objectives, four broad parameters were chosen:

- **Business Related:** Being a commercial organisation we cannot deny the importance of business related parameter, which form the basis of our day-to-day working.

- **Customer Related:** ISO 9001 QMS is a customer centric management system and keeping in mind this aspect, MECON has included following points in maintaining its focus towards its customers:

  › customer requirements

  › capability competence analysis

  › target setting

  › process management

  › management review

  › customer communication

  › customer satisfaction

  › continual improvement

The 'customer focus' model as depicted in MECON's Apex Quality Manual is reproduced here:
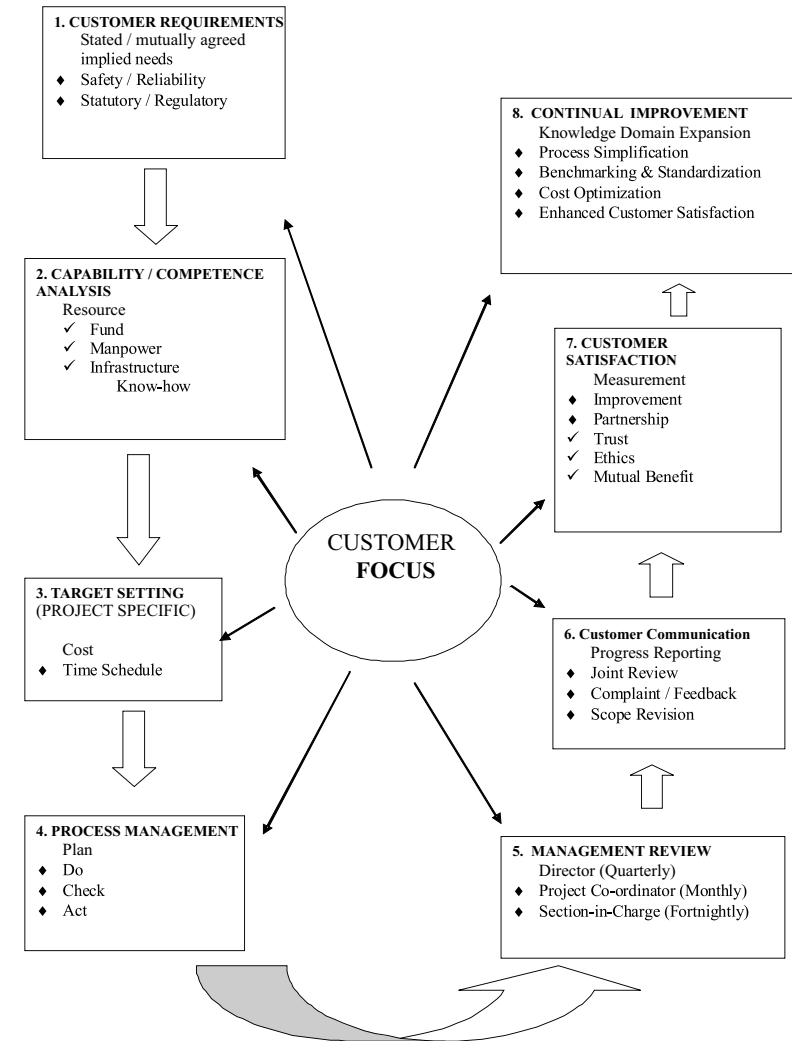
- **Performance Related:** Several parameters and benchmarks are set for various processes like drawing preparation cycle time in hours, project schedule adherence index, etc. by the management. These get revised annually which help in consistent performance and delivery of standardized services to our clients.

- **Improvement Related:** MECON is a knowledge based organization and values its human resource. We lay emphasis on keeping our talent pool updated with the skills required by the current market through proper training. And on the knowledge front, we have started our knowledge management journey by creating a rich knowledge repository and now heading towards the second stage of this journey i.e. knowledge sharing'.

THE EXPERIENCE

A core team took charge of implementation which was later termed as "Quality Council" at Corporate level with Management Representative (MR) as its leader. Representatives of MR called Management Representative's Representatives (MRRs) were appointed at all main branch offices of MECON. This team started the process of awareness program for different levels of employee at all major offices of MECON and also developed the documentation at corporate level called Apex Quality Manual (AQM). This team also guided the functional groups in developing the Departmental Quality Manual (DQM) which covers the process flow, work instructions, formats in use etc.

AQM captures the core activities of MECON through the following flow sheets :

Flow Chart for Design and Supply (EPC) Project

For Mega Projects

AQM Page No. 17 of 20 (Section 4.0)

Procure-ment Group
contract
Proj.(F)

Vendors

Engineering Services Group
Civil
Stru.
Elec.
Instr.
Hydro
Arch.
M.H.

(Above groups also exchange assignments among themselves)

Marketing

Project Co-ordinator

Customer

Over all Comm. Tech.

Technology Groups
(Package Co-ordinators)
Steel
Equpt.Engg.
Power
Petro

Primary assignment

Secondry & Tertiary assignment

Proj. Plg. & Scheduling
<Interface with Site & Tech. groups >

QA & Inspn.

Vendors & Site execution

Legend:
Before Order Placement
After Order Placement
Under intimation to project Co-ordinator

File name: AQM-interface-model-r2-edn5

EXHIBIT 'C'

Inter- relation of processes (Typ.) for Mega projects
(Actual as per Project Specific Quality Plan)

Flow Chart for Consultancy Project

LOI / EFFECTIVE DATE

FINALISATION AND SIGNING OF CONTRACT

QUALITY ASSURANCE PLAN

PREPARATION OF COMMERCIAL DOCUMENTS FOR TENDER

FINALISATION OF FEED BACK & MONITORING AND RELEVANT FORMATS

PROJECT SCHEDULE MACRO LEVEL PERT NETWORK

IDENTIFICATION OF PACKAGES

FINALISATION OF SITE CONTRACTOR BY CUSTOMER

PROGRESS REVIEW AND REPORTING, MONITORING AND CONTROL

MICRO - LEVEL PERT NETWORK & DETAILED SCHEDULE TO SECTION

FINALISATION OF VENDOR LIST & ISSUE TO CUSTOMERS

CONSTN. & ERECTION BY CONTRACTOR

FINAL SCOPE OF WORK, DIVISION OF RESPONSIBILITIES

ALLOCATION OF MANPOWER, WEIGHTAGES FIXATION FOR PROGRESS COMPUTATION

INTERSECTION ASSIGNMENT

PREPARATION OF SPECIFICATION

DESIGNER'S SUPERVISION / CONSTN. & ERECTION SUPERVISION BY MECON

BILLING SCHEDULE WITH CUSTOMER

CONTROL OF EXPENDITURE OF MANHOURS

ENQUIRY, SCRUTINY, NEGOTIATION & RECOMMENDATION TO THE CUSTOMER

BILL CERTIFICATION

INVOICING AND COLLECTION OF PAYMENT FROM CUSTOMER

PREPN. & ISSUE OF DESIGN DRAWINGS

PLACEMENT OF ORDER BY CUSTOMER

PREL. ACCEPTANCE TEST

PREPN. & ISSUE OF MANUF. DRGS. IF REQD.

VENDOR'S DRAWING APPROVAL BY MECON

COMPILATION OF FINAL DOCUMENTS FROM SUPPLIER

PURCHASE OF BOUGHTOUTS & FAB. / MANUF. BY VENDOR

COMMISSIONING

INSPN. & EXPEDITING

AS - BUILT DRAWINGS

DESPATCH TO SITE

FAT & POST - COMMN.
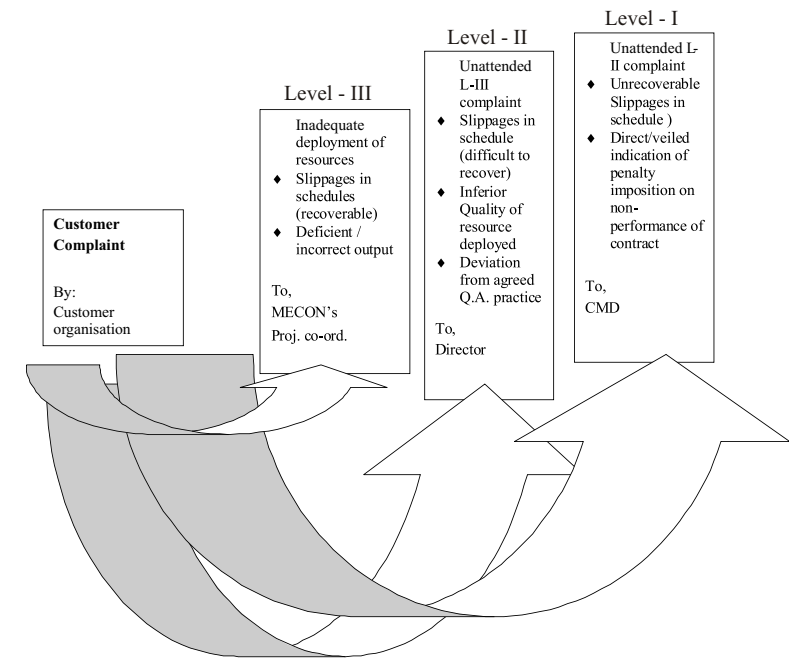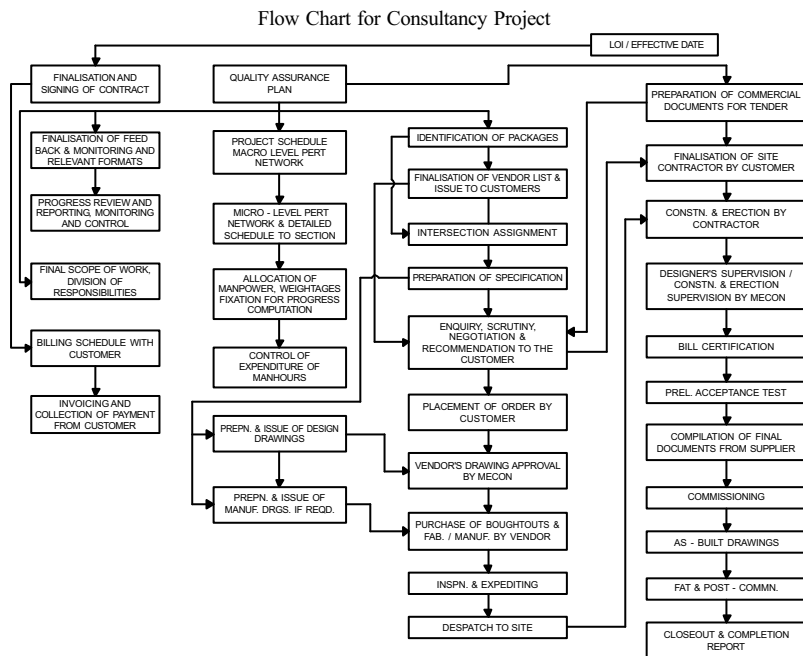
CLOSEOUT & COMPLETION REPORT

For any project (Engineering Consultancy or EPC) undertaken by MECON, the project coordinator has to start with a project quality plan, a guideline document for this is a part of AQM. This document addresses all issues related to project starting with brief description of the project. It includes project objective and deliverables, exclusions, schedule and network, extra work identification process, customer responsibility, customer property, package configuration, project organization chart, responsibility matrix, progress reporting system, billing schedule, resource planning, drawing/document numbering system, non-conformity control mechanism etc.

To enhance customer focus, QMS implementation has evolved two major systems Customer Satisfaction Measurement (CSM) for Consultancy and EPC projects which can be termed as pro-active measure and Customer Complaint hierarchy which is a three-tier system.

3-tier - Customer Complaint Hierarchy

Customer Complaint

By: Customer organisation

Level - III

Inadequate deployment of resources
♦ Slippages in schedules (recoverable)
♦ Deficient / incorrect output

To,
MECON's
Proj. co-ord.

Level - II

Unattended L-III complaint
♦ Slippages in schedule (difficult to recover)
♦ Inferior Quality of resource deployed
♦ Deviation from agreed Q.A. practice

To,
Director

Level - I

Unattended L-II complaint
♦ Unrecoverable Slippages in schedule)
♦ Direct/veiled indication of penalty imposition on non-performance of contract

To,
CMD

As a service provider in the field of engineering consultancy and turn-key execution of projects, our main resource is highly skilled technical workforce. Accordingly we need to focus on competency development and knowledge management. In-house system has been developed to capture competencies of the technical manpower and link it with training and development plans. To capture explicit knowledge an e-archive system has been put in place and is being monitored at regular intervals. To enable transfer of tacit knowledge, HRD facilitated inter and intra section technical sessions which are being regularly organized.

OUTCOME AND IMPACT

All these efforts have brought in a lot of improvement leading to improved bottom-line, better accomplishment of projects in terms of timely deliverables resulting in better CSM index and improved consistent practices in-house. ISO 9001 certificate (standard) help companies gain benefits in internationalization, quality improvement, sales enhancement, and cost reduction.

Following is a consolidated detail of our progress in terms of achievement of targets set at the beginning of every year. It gives a clear picture of how much we have gained after implementation of Quality Management System (QMS) as per ISO 9001.

Corporate Quality Objective-Target & achievement for the period 2005-2009

Financial year	A. Customer Related		B. Performance Related		
	Customer Satisfaction Measurement (CSM) Index	Survellaince Audit / Recertification Audit (CAR)	Drawing Preparation Cycle Time (Hrs/A1 equivalent drawing)	Project Schedule Index (No. of Projects on schedule / Total no. of Projects)- Number Index	
				Consultancy	Turnkey (EPC)
Target (2007 - 08):	85	0	30	0.7	0.9
Achievement (2007- 08)	84.17	0	24.3	0.43	0.6
Target (2006 - 07):	85	0	31	0.7	0.9
Achievement (2006- 07)	87.09	0	23.75	0.6	0.66
Target (2005 - 06):	85	0	32	0.7	0.9
Acheivement (2005- 06)	90.18	0	24.96	0.6	1
Target (2004 - 05):	80	2	28	0.6	0.9
Acheivement (2004- 05)	84.43	0	27.09	0.6	0.57

MECON is an Engineering consultancy and consequently it's a knowledge-based organization. The most valuable assets of MECON are its employees.So, the progress can be best defined in terms of improvement in "Turnover per Employee".

Year of reference	Turnover per Employee (in Rs. Lakhs)
1997-1998	5.5
2002-2003	12.23
2007-2008	27.84

LESSONS LEARNT

- the implementation of ISO 9001 and its continuous maintenance through work practices has led to one firm belief: 'Our processes need to be system oriented and not individual dependent. '

- MECON works on Project concept - be it consultancy or turnkey. At the end of every project, we share the 'Do's and Don'ts', this help in better performance in subsequent projects. These help in creating a guideline document for 'project specific quality plan' before start of each project.

- we emphasise the sharing of tacit knowledge by experienced professionals with new comers through classroom sessions or by associating the younger ones with seniors in projects.

FUTURE PLANS

We intend to adopt changes as envisaged in ISO 9001: 2008 by the end of this year. To enhance the project mind-set in our technical workforce, who are at the forefront of executing projects, we have started e-learning module of project management called CIPM (Certification in Project Management) being administered by Project Management Associate (PMA). We intend to cover maximum number of technical workforce to this.

We further intend to enrich our e-archive and monitor its sharing for enhanced productivity.

J. Mathew,
General Manager,
Technical Services (Power) &
Management Representative for QMS
MECON Limited
Ranchi (Jharkhand)

Sanjeev Kumar,
Assistant General Manager (Personnel) &
In-charge (Human Resource Development) & Member,
Quality Council
MECON Limited
Ranchi (Jharkhand)

TQM Initiatives in
Rural Health Centres

S. Fareed Uddin

Community Health Centre (CHC) based at Tendukheda block of Damoh district in Madhya Pradesh is the rural health institution where the Japanese International Development Agency (JICA) started a project on reproductive health as a pilot initiative in the Sagar division of Madhya Pradesh.

THE CONTEXT : THE INSTITUTION AND ITS ACTIVITIES

Community health centres, primary health centres, sub health centres are all parts of the 3-tier system for rural health care in India following the world health summit and declaration of the goal of 'Health For All (HFA) 2000 AD. As a signatory to HFA-2000, the three tier system was rolled out in India under the rural services with the fifth five year plan in 1978. This system was based on the concept of primary health care, defined as "essential health care made universally accessible to individuals and acceptable to them, through their full participation and at a cost the community and country can afford."

Currently the comprehensive health care approach exists under various national health programmes: epidemic, malaria, blindness and tuberculosis control; leprosy elimination; polio eradication; reproductive and child health & family welfare; health education and school health programme. All these programmes deliver health services to the remotest of areas.

Acknowledging the role of health in the process of economic and social development, which improves the quality of life of citizens, the government of India, in 2005, launched the National Rural Health Mission to carry out necessary architectural correction in the basic health care delivery system. The mission adopts a synergistic approach by relating health to determinants of good health through segments of nutrition, sanitation, hygiene and safe drinking water. The National Common Minimum Programme spells out the commitment of the government to enhance budgetary outlays for public health and to improve the capacity of the health system to absorb the increased outlay. This seeks to bring all round improvement in public health services. The NRHM aims to provide effective health care to the rural population, especially the disadvantaged groups including women and children. This is done by improving access, enabling community ownership and demand for services, strengthening public health system for efficient service delivery, enhancing equity and accountability and promoting decentralization.

Table summarising NRHM Priorities, Constraints and Actions

Priorities	Constraints	Action to overcome constraints
Functional facilities - Establishing fully functional Sub Health Centres / PHCs / CHCs / Sub Divisional / District Hospitals.	• dilapidated or absent physical infrastructure • non-availability of doctors/paramedics • drugs/ vaccines shortages • dysfunctional equipments • untimely procurements • chocked fund flows • lack of accountability framework • inflexible financial resources. • no minimum mandatory service provision standards for every	♦ infrastructure/equipments ♦ management support ♦ streamlined fund flows ♦ contractual appointment and support for capacity development ♦ pooling of staff / optimal utilization ♦ improved MIS ♦ streamlined procurement ♦ local level flexibility ♦ community /PRI/RKS for accountability / M & E ♦ adopt standard treatment guidelines for each facility

Priorities	Constraints	Action to overcome constraints
	facility in place which makes full use of available human and physical resources and no road map to how desirable levels can be achieved.	and different levels of staffing, and develop roadmaps to reach desirable levels in a five to seven year period.
Increasing and improving human resources in rural areas	• non-availability of doctors • non-availability of paramedics • shortage of ANMs/MPWs. • large jurisdiction and poor monitoring. • no accountability • lack of any plan for career advancement or for systematic skill upgradation. • no system of appraisal with incentives / disincentives for good / poor performance and governance related problems.	♦ local preference ♦ contractual appointment to a facility for filling short term gaps. ♦ management of facilities including personnel by PRI Committees. ♦ train and develop local residents of remote areas with appropriate cadre structure and incentives. ♦ multi-skilling of doctors / paramedics and continuous skill upgradation ♦ convergence with AYUSH ♦ involvement of RMPs. ♦ partnership with non-State stakeholders.
Reducing maternal and child deaths and population stabilization	• lack of 24X7 facilities for safe deliveries. • lack of facilities with for emergency Obstetric care. • unsatisfactory access and utilization of skilled assistance at birth • lack of equity/sensitivity in family welfare	♦ functional public health system including CHCs as FRUs, PHC- 24X7, SHCs, Taluk / District Hospital ♦ trained ANM locally recruited ♦ institutional delivery ♦ quality services at facility ♦ expanding facilities capable of providing

Priorities	Constraints	Action to overcome constraints
	Services / counseling. • non-availability of Specialists for anaesthesia, obstetric care, paediatric Care etc. • no system of new born care with adequate Referral support. • lack of referral transport	contraception including quality sterilization services on a regular basis so as to meet existing demand and unmet needs.

BACKGROUND

Aim & objectives: What was the initiative all about? What did it set out to achieve?

The priorities set by the NRHM mandate spell out clearly the actions required for strengthening health services. The JICA/MP reproductive health project being implemented in the Sagar division of Madhya Pradesh aims at strengthening the government health delivery system, especially the RCH. An agreement was reached between the Japanese and the Indian government to provide Japanese technical assistance to improve the reproductive health of the state of Madhya Pradesh in 1995.This led to the initiation of the current project titled "JICA/MP Reproductive Health" which began in September 2005. The main objective of the JICA/MP-RH project was to reduce the MMR, IMR and TFR in the Sagar division through an overall improvement in the quality of the field based and facility based services. The Project strategy focuses on operationalisation of the actions priortised under the NRHM (please refer the above table). The implementation plan for the project comprised of four main areas for technical cooperation: human resource management, total quality management, health management information system and information, education & communication.

In the initial stage, the JICA/MP RHP focussed on building models in four pilot blocks of two of the districts in Sagar division. The lesson emerging from such model creation would then act as basis for standardisation for further scaling up.

The present case study is of a pilot block where TQM initiatives by the JICA/MP RHP resulted in improvement in the facility as well as quality of the institutional deliveries.

Opportunity/Problem: Pre-initiative status of the area / domain in which quality initiative was undertaken; reason for taking the decision to start a quality initiative; persons involved in the decision making process etc.

AREA PROFILE

Tendukheda is a small town a revenue block, some 70 kms south of the district headquarters of Damoh. The place is named after the Tendu trees whose leaves are plucked for beedi making. This idyllic name suggests Tendukheda's infertility and backwardness. A drive along the dilapidated roads from Tendukheda to the nearest town of Damoh takes three hours.

Tendukheda Block Profile

Total Population	- 1, 28,208
Total no. of Villages	- 188
Birth Rate	- 3.2
No. of CHCs	- 1
No. of PHCs	- 1
No. SHCs	- 27

PRE INTERVENTION SCENARIO

The CHC Tendukheda presented a dismal picture. A depressing facade and patients scattered along its corridors. Stray cats and dogs added to the woeful picture. The shrill screams of women in

labour could be heard clear above the reigning the chaos. The leaky labour room was just opposite the laboratory. There was no privacy for women in labour. Women and children coming for immunization crowded the corridors, where they gathered around a single table. The block medical officer (BMO), who had been there for over 25 years, had a room filled with patients awaiting their turn in the disorganized OPD. The maternity wing, labour room and the lady doctor's room were far apart. A lady doctor, worked under pressure of ANC check ups. The converted PNC ward presented a stark picture with windows without glass panes and beds minus bed sheets. With no delegation of responsibility, the doctor was managing the CHC entirely on his own.

With the introduction of the JSY, the CHC was absolutely fresh for the new challenges. There were insufficient personnel to handle delivery cases and the lack of staff simply could not take on the voluminous load of new schemes. Though financial resources were available, the shortage of manpower and the poor infrastructure were impediments.

Thus CHC presented a fit case for the project interventions and turning it around into a model facility. The project team saw the opportunities available with the resources provided and flexibility in use of finances combined with the power of decentralization that NRHM delegated.

Setting the Scene: Pre-initiative activities like engaging consultants, training of personnel, setting up of quality teams, deciding quality, and other successful measures.

The JICA Project recee took stock of the CHC by interacting with the BMO, the staff and physical inspection. A strategy was formulated to counter the chronic problems to be solved through simple management tactics. The TQM consultant was given the responsibility of building this model. Unanimously, the project team agreed to work together to build this model.

**The experience: How did the institution go about? What did it actually do?**

Based on the aforesaid framework, the project team set out its motto learning by doing while being open to improvisations to improve the facility. The following events facilitated by the JICA project team, turned the facility around.

- the consultation with the BMO and his team was initiated in September 2005. First, the BMO listed the equipments required in the CHC. Secondly, the ANMs were consulted. Taken aback, the ANMs came up with routine problems where the time was wasted during deliveries for medicines and equipments. The active involvement of the ANM in planning helped make the facility more user-friendly.

- ANMs and LHVs of the CHC staff were trained on core competencies of skill birth attendant, especially the ANC check ups from June 2006.

- a practical session on ANC for trained health workers was organised by JICA in the CHC in July 2006. The staff took stock of organizational skills required for holding a successful ANC clinic.

- simultaneously the project consultants continued to update the district administration which facilitated repair.

- the BMO gained confidence as a leader, especially after recognition by an International agency.

- on job coaching on management and resource mobilization was also adopted. Rounds of multi-level discussions involving the CM&HO and the DPM and also sometimes the district collector alongwith the BMO for mobilization of funds were facilitated by the JICA Project.

- funds for construction were finally sanctioned at the district level in January 2007. Tenders were floated and the process was completed without any procedural delays. The construction of the ten year old unfinished building finally commenced. The Staff began to take an active interest in

supervising construction and ideas of possible layout were discussed every day.

- as soon as the things started taking shape the district authorities too got motivated and the DPM & CM&HO decided to make provisions for funds to finish the entire unfinished construction of this CHC in the Program Implementation Plan (PIP) in 2008 -09.

- simmering conflicts surfaced because of a communication gap between the BMO and the lady doctor. After appreciating this team anomaly the JICA project facilitated the quality circle meeting. During the first QC meeting, the top to bottom cadre came together to realize ownership towards CHC. Many proactive action plans emerged out of this meeting.

- during this phase (January to March 2007), the BMO initiated the organization of a structured ANC clinic every week with a separate room was allocated for facilities like height chart, weighing machine, BP machine etc. The ANMs and the staff nurses took the lead in holding the ANC clinics every week. So, the lady doctor checked only high risk cases. This work load re-distribution increased efficiency and increased client satisfaction.

- the gradual improvement reflected on the CHC as it won appreciation and respect for the BMO as well as other support staff. As the facility got organized, the team's performance showed better grades. Gradually, the BMO and the CHC staff started functioning as a team which led to the obvious change.

Figure depicting the transformation in communication channel.

Multi - Channel Communication

Streamlined Communication Channel
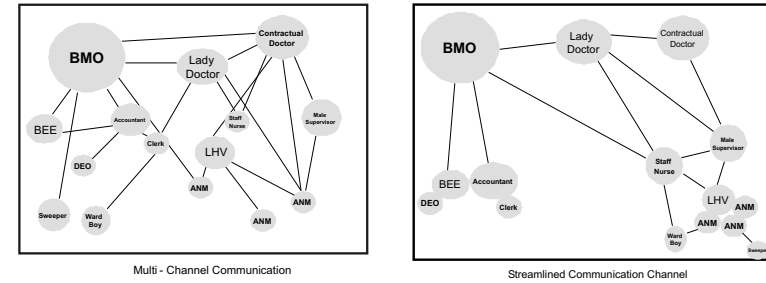
| **Multi Channel Communication**	**Streamlined Communication**
The Communication was so erratic and multi-channel that there was a state of confusion and many workers in the lower cadre were unable to understand their own position and responsibility.	The Streamlined Communication, after the Quality Circle Meeting in the month of January 2007 gave a sigh of relief to the BMO and other staff members. The CHC was streamlined with each cadre performing their task with greater efficiency.

The Maternity wing got completed in June 2007. It has facilities meeting the IPHS standards. Minor things such as regular water supply and staff duty room displayed quantum achievements.

TENDUKHEDA - BEFORE

CHC TENDUKHEDA LAY-OUT AS ON SEPTEMBER 2005
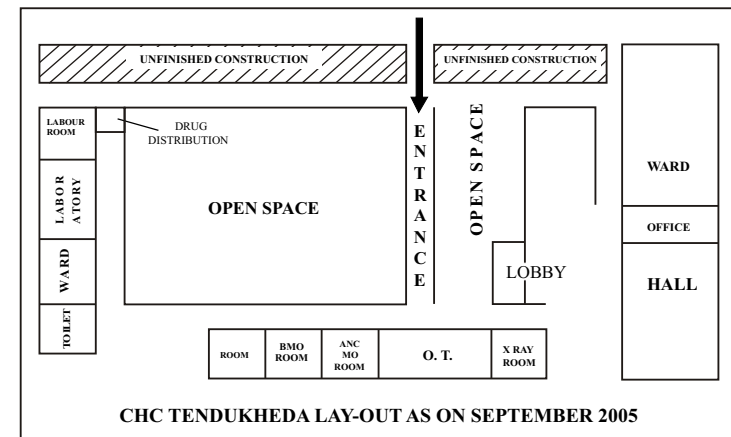
The unfinished construction for over 12 years

The unfinished construction for over 12 years.
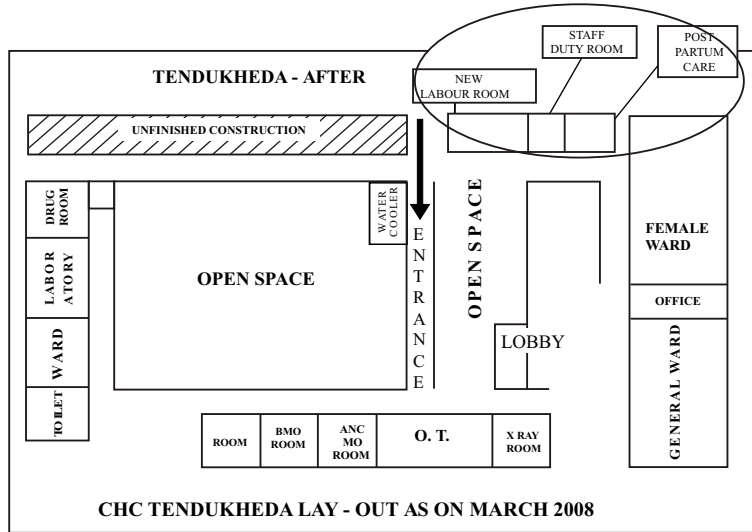
Encircled area is the newly constructed Maternity Wing

Meanwhile, the BMO was transferred in September 2007. Dr. Tulsa Thakur, the lady medical officer got the officiating charge.

The change of gender in leadership brought with it the innate baggage of non-acceptance in the traditional set up of Bundelkhand. She faced stiff resistance from some quarters. With repeated consultations, the BMO transformed her leadership style to a more consultative one. The new BMO worked on giving the entire CHC a changed and new look. Impressed with her work, the DPM accelerated the fund allocation worth Rs. 40.00 Lakhs for the completion of constructions. Minor yet visible changes like repair and maintenance of furniture, clean toilets, drinking water provision improved the ambience of the CHC.

OUTCOME AND IMPACT

The two years long intervention permitted gamut of human, physical and financial sector of the institution. On the human

resource front, the skilled birth attendance and ANC check ups by paramedical staff shown improvement. The team spirit brought clarity of roles and responsibilities. It saw a committed mindset in a better working environment. On the physical resources, a maternity wing; new stores; optimal utilization of space; conversion of the dumping site into a garden; installing drinking water and waiting area facilities were the additions. The need based utilization of untied funds and resource mobilization improved the infrastructure. These impacts led to improvement in maternal health services at CHC Tendukheda.

Taking the NRHM priorities as the base (please refer the above Table), the impact of the total quality management interventions on the institution have been summarized in the following Table.

Constraints	Results through JICA facilitation in the CHC Tendukheda
Dilapidated or absent physical infrastructure	Utilisation of untied funds for repair and maintenance of the existing facility. Resource mobilization to complete the unfinished construction.
Dysfunctional equipments	Repair, maintenance and capacity building to use equipments which were lying unused.
Chocked fund flows	Multilevel advocacy for need based fund disbursement and minimizing procedural delays in fund disbursement.
Lack of accountability framework	Establishing clarity of and assigning through participatory process roles and responsibilities. Holding structured block meetings with fixed agenda. Initiating Evidence Based Planning & Management.
No minimum mandatory service provision standards for every facility in place which makes full use of available human and physical resources and no road map to how desirable levels can be achieved.	Standardisation of the CHC as per protocol and national guidelines to meet the basic criteria. Fixing accountability of Paramedic staff and streamlining reporting system.

Constraints	Results through JICA facilitation in the CHC Tendukheda
Untimely procurements	Procurement of basic assets like gloves, initiation of timely placement of reorder levels.
Non-availability of paramedics	Making Duty Roaster to distribute the available staff as per need.
Large jurisdiction and poor monitoring.	Workload rationalization through Microplanning which ensures timely visits to all outreach areas. Supervisors, Sector Medical Officers and BMO use Consultative supervision techniques to improve the quality of health service delivery.
No accountability	Quality Circle meetings and Block meetings act as platform for improving transparency for fixing roles and responsibility and thus increasing accountability.
Lack of any plan for career advancement or for systematic skill upgradation.	Encouraging on the job training of Paramedics for improving SBA skills and Core competency training of ANM and LHVs
No system of appraisal with incentives /disincentives for good/poor performance and governance related problems	The streamlined reporting system and EBPM help bringing transparency in the performance ranking of the workers.
No system of new born care with adequate referral support.	Operationalisation of the New Born Corner after the OJT of the workers.
Lack of 24X7 facilities for safe deliveries.	Making and religiously following the Duty roaster in a manner to ensure 24x7 presence of SBAs and the supporting staff.
Unsatisfactory access and utilization of skilled assistance at birth	Functionalizing 4 corners and 5 trays as per IPHS

LESSONS LEARNT

Japanese Strategy for TQM – 5 S (Seiri=Sort, Seiton=Set, Seiso=Shine, Seiketu=Standardise, Shituke=Sustain) and Kaizen (CQI=Continuous Quality Improvement) was adopted by the Project. Though 5-S strategy in health sector was a bit new yet displayed remarkable outcomes in improving the services. The following table shows the process and formed a lesson for the CHC staff that better organisation and planning is possible even though there are limited human resources. Also through timely and proactive actions many problems could be avoided and solved. Motivation and self realisation by the individuals and sense of duty and team work could bring bright changes in the performance of each member of the staff.

Sort	Set	Shine
Unused / dead space	Space organization in CHC (according to logical sequence like separate Registration counter, Maternity wing, drug dispensary etc.)	
Unused / damaged equipments (including computers)	• maintenance of damaged equipments • setting the unused equipments as per requirement	OJT
Expired medicines / drugs / consumables	Disposal of expired medicines / drugs / consumables	Organized Drug store with labels and maintained records.
Illogical drug procurement	Inventorization for need based procurement	
Incomplete & false Records and reports	Systems for true recording	Streamlining reporting system.

Sort	Set	Shine
Dumped supplies from district	Relocation of dumped supplies to outreach / other hospitals	
Ad-hoc use of existing Human Resources	Making duty roasters and establishing clarity of roles and responsibilities.	Capacity building for optimal HR utilization of health managers.
Improper sanitation	Use of disinfectants, cleaning of choked drains, assigning duties for cleaning staff.	
Unhygienic premises	Repair of unused toilets, arranging water supply from local Administration.	
Improper Bio Medical Waste Managemen	Construction of waste disposal pits and initiating usage of colour coded bins as per rules.	Orientation and OJT for Bio Medical Waste Management.
Unplanned fund utilization and unused funds	Need based fund utilization and financial planning.	Capacity building on financial management.
Weak administration and unorganized systems (non structured meetings)	Quality Circle meetings and structured block meetings	Capacity building on how to conduct meetings efficiently.
Dejected staff and lack of team spirit	Coaching and mentoring of all staff.	
Non standardized service delivery	Standardisation as per technical protocols.	OJT of paramedical staff.

FUTURE PLANS

The CHC staff is delighted with results but sustenance of the model is real challenge. The institution ought to revisit the mechanism and system available to meet the challenges posed by political interference, administrative exigencies, socio-political scenario and procedural bottlenecks.

S. Fareed Uddin
Project Operations Manager
JICA-MP Reproductive Health Project
Bhopal (M.P.)

Quality Assurance in Higher Education:
The Role of NAAC

B. S. Madhukar, Wahidul Hasan

INDIAN HIGHER EDUCATION: AN OVERVIEW

Higher education in India is as old as civilization. In ancient India, Nalanda attracted students from all over India as also from Tibet, China, Central Asia, Indonesia, Persia, Turkey and Korea. This ancient university could accommodate over 10000 students and 2000 faculty. The curriculum included scriptures, philosophy, medicine, logic and exegesis (Hiuen-Tsang). Higher education in modern India has evolved in distinct and divergent streams with each stream monitored by an apex body, indirectly controlled by the ministry of human resource development. Our education system in the country has grown rapidly since independence. Colleges and universities have come up everywhere. It has witnessed a quantum jump since 1950. The number of universities has gone to 431 from just 25 in 1950; whereas, the number of the colleges, has gone to around 20,677 from 700 in 1950.

Most of these universities and institutions are largely funded by the state governments. However, central universities are maintained by the Union Government. The Engineering education and business schools are monitored and accredited by the All India Council for Technical Education (AICTE) while medical education is monitored by the Medical Council of India (MCI). Like-wise, agriculture education and research is under the Indian Council for Agriculture Research. Apart from these, National Council for Teacher Education (NCTE) controls all the teacher training

institutions in the country. While the regulatory mechanisms have ensured satisfactory functioning of the system with unprecedented quantitative expansion, raising the quality standards of higher education is a goal that still eludes us.

The growth of private initiatives has only further increased the concern for quality. Run on student fees, these colleges are known as self-financing colleges. Though self-financing, they have to comply with the rules of the government and the affiliating university. The growth in the number of self-financing colleges adds to the pressure on the affiliating universities. Against this background, external quality assurance through an autonomous body was felt an appropriate strategy for quality assurance and to restore the confidence of the academia in the quality of indian higher education. Consequently, as part of its responsibility for the maintenance and promotion of standards of education, the University Grants Commission (UGC) established the National Assessment and Accreditation Council (NAAC) in 1994 with its headquarters at Bengaluru.

Due to persistent effort by NAAC, institutions of higher learning across the nation have realised the benefits of assessment and accreditation, triggering a quality movement amongst institutions, as well as enhancing the awareness of institutional quality amongst all stakeholders.

VISION, MISSION AND VALUE FRAMEWORK OF NAAC

The activities and plans of the NAAC are guided by its vision and mission that focus on making quality assurance an integral part of the functioning of higher education institutions.

VISION

- to make quality the defining element of higher education in India through a combination of self and external quality evaluations, promotion and sustenance initiatives

MISSION

- to arrange for periodic assessment and accreditation of institutions of higher education or units thereof, or specific academic programmes or projects;
- to stimulate the academic environment for promotion of quality of teaching-learning and research in higher education institutions;
- to encourage self-evaluation, accountability autonomy and innovations in higher education;
- to undertake quality-related research studies, consultancy and training programmes, and
- to collaborate with other stakeholders of higher education for quality evaluation, promotion and sustenance

VALUE FRAMEWORK

To promote the following core values among the HEIs of the country:
- contributing to national development
- fostering global competencies among students
- inculcating a value system in students
- promoting the use of technology
- quest for excellence

Mandate and Objectives of NAAC:

The main objectives of NAAC are to:
- assess & accredit institutions of higher learning
- generate awareness of quality in education
- make self assessment embedded in the institutional culture
- share information on successful quality strategies
- help institutions to know their strengths & weaknesses and thus
- focus on improvement of quality

ASSESSMENT PROCESS

Assessment

Assessment is the performance evaluation of an institution of higher learning and/or its units, based on seven criteria.

Accreditation

Certification provided by NAAC which is valid for a period of 5 years

Seven Criteria for Assessment:
- curricular aspects
- teaching-learning and evaluation
- research, consultancy and extension
- infrastructure and learning resources
- governance and leadership
- innovative practices

Based on the above criteria the Self study report (SSR) is prepared by the institution.

CRITERIA-WISE KEY ASPECTS

The NAAC has identified the following key aspects under each criterion, to facilitate the institution to write its SSR effectively. This, in turn, facilitates effective and objective assessment by the peer team:

Criterion I - Curricular Aspects
- curricular design and development
- academic flexibility
- feedback on curriculum
- curriculum update
- best practices in curricular aspects

Criterion II - Teaching-Learning and Evaluation
- admission process & student profile
- catering to diverse needs
- teaching-learning process
- teacher quality
- evaluation process and reforms
- best practices in teaching, learning & evaluation

Criterion III - Research, Consultancy and Extension
- promotion of research
- research and publication output
- consultancy
- extension activities
- collaborations
- best practices in research, consultancy & extension

Criterion IV - Infrastructure and Learning Resources
- physical facilities
- maintenance of infrastructure
- library as a learning resource
- ICT as learning resources
- other facilities
- best practices in the development of infrastructure and learning resources

Criterion V - Student Support and Progression
- student progression
- student support
- student activities
- best practices in student support and progression

Criterion VI Governance and Leadership
- institutional vision and leadership
- organizational arrangements
- strategy development and deployment
- human resource management
- financial management and resource mobilization
- best practices in governance and leadership

Criterion VII Innovative Practices
- internal quality assurance system
- inclusive practices
- stakeholder relationships

The peer team based on the Self Study Report (SSR) submitted by the institution carries out the assessment of the institution by way of a site visit. At the end of the assessment visit the peer team submits an evaluation report to the institution which is akin to a SWOT analysis of the institution. The team also recommends a 'grade' for the institution based on the scoring pattern suggested by NAAC in a confidential manner. The Executive Committee (EC) of NAAC examines the copy of the report submitted to the institution and the grade suggested by the team. The acceptance of the report and the grade by the EC results in conferring an 'accredited status' to the institution, which runs for five years.

CHANGES DUE TO FEEDBACK

NAAC has been fine tuning its methodology based on the feedback obtained from institutions and other stake holders periodically. Effective from 1st April, 2007 the manual titled 'New Methodology of Institutional Assessment and Accreditation' was introduced.

The major change is the formulation of a two step process in assessment, change in the grading pattern, apart from changes in the manual.

Two step approach for A&A of all affiliated and constituent colleges are as follows:

Step 1:

Determination of Institutional Eligibility for Quality Assessment (IEQA), and if found eligible

Step 2:

Assessment and accreditation

The criteria and key aspects as described earlier are used for evaluation.

GRADING PATTERN

In the initial phase of assessment a two point assessment pattern was adopted i.e. notifying institutions with accredited or not accredited status. After completing assessment of few institutions using this pattern it was felt that this categorization was insufficient

Cumulative Grade Point Average (Range)	Letter	Performance Descriptor	Interpretation of Descriptor
3.01 - 4.00	A	Very Good (Accredited)	High level of academic accomplishment as expected of an institution
2.01 - 3.00	B	Good (Accredited)	Level of academic accomplishment above the minimum level expected of an institution
1.51 - 2.00	C	Satisfactory (Accredited)	Minimum level of academic accomplishment expected of an institution
$\leq$ 1.50	D	Unsatisfactory (Not Accredited)	Level of academic accomplishment below the minimum level expected of an institution.

as it bunched a large number of institutions under a single status without finer differentiation between institutions and so the five point grading system or the star grading system was introduced (about 1000 institutions were accredited using this pattern). The star grading system was modified to 9 point grading system to provide wider scope for finer differentiation between institutions. Now grading is based on cumulative grade point average obtained by the institution.

Status of assessment and accreditation by NAAC

Accredited HEI's as on 28th March 2008	
Universities Accredited	**Colleges Accredited**
140	3591
Total - 3731	

RE-ACCREDITATION

Accreditation is valid for 5 years from the date of NAAC certification. After the completion of five years of the first accreditation, institutions are required to send their intent to NAAC, and volunteer for re-accreditation. A functional Internal Quality Assurance Cell (IQAC) and a functional institutional website are the Minimum Institutional Requirements (MIR) to volunteer for re-accreditation. The same methodology as practiced for initial assessment is used again.

Status of Re-accreditation by NAAC

Re-Accredited HEI's as on 28th March 2008	
Universities Accredited	**Colleges Accredited**
15	125
Total - 140	

INTERNAL QUALITY ASSURANCE CELL (IQAC)

NAAC proposes that every accredited institution establish an Internal Quality Assurance Cell (IQAC) as a post-accreditation quality sustenance measure. As quality enhancement is a continuous process, the IQAC will become a part of an institution's system and work towards realizing the goals of quality enhancement and sustenance. The prime task of the IQAC is to develop a system for conscious, consistent and catalytic improvement in the performance of institutions. It does not have to be another hierarchical structure or record-keeping exercise in the institution. It is a facilitative and participative unit of the institution.

The IQAC should make a significant and meaningful contribution to the institutional quality improvement. In the post-accreditation period, the IQAC will channelize the efforts and measures of an institution towards academic excellence. It also enables the institution to understand its strengths and opportunities, which it can make use of for developing intrinsic potentials

IMPACT OF NAAC

From the initial phase of apprehensions about external review, NAAC has come a long way in creating quality movement in the higher education in the country. NAAC has successfully passed through quite a few milestones of the past decade in its journey of promoting quality-related initiatives in higher education. The initiatives taken by NAAC for creating a quality culture in the country has been widely appreciated. Higher education institutions have come to realize the intrinsic benefits of NAAC accreditation. While NAAC has succeeded in generating keen interest and concerns about quality assurance among the stake holders of higher education, it has also ensured effective dissemination of information about assessment and accreditation.

Innumerable seminars organized by the NAAC throughout the country have created awareness among the stakeholders on quality-related issues. It has triggered quality assurance activities in many of the higher education institutions. NAAC has brought out more than 150 publications on various themes related to quality which has created better understanding of quality assurance among higher education institutions.

It has also helped other funding and regulatory agencies to make some of their decisions based on the outcomes. A significant achievement is the partnership with stakeholders for proactive measures to promote assessment and accreditation. Many states have established quality cells to promote assessment. Its efforts to promote usage of the assessment outcome as reliable information for decision-making have been very successful. The UGC has already linked with the outcome of assessment and accreditation to developmental support to educational institutions. NAAC accreditation has been made a pre-requisite for granting and continuation of autonomous status and deemed university status for institutions. The level of funding under the UGC scheme for "colleges with potential of excellence", consideration for expansion in terms of courses and student intake in teacher education institutions by NCTE, granting of permanent affiliation, etc are now linked to the accreditation status by various state governments. Internationally, it is a member of the International Network for Quality Assurance Agencies in Higher Education (INQAAHE). It also organized the sixth bi-annual meet of the member agencies in 2001 at Bangalore and is actively collaborating in many quality assurance initiatives of other countries, especially in the Asia-Pacific region. Succinctly, the impact of NAAC assessment and accreditation on higher education institutions are very encouraging.

FUTURE CHALLENGES

While the impact of NAAC has been encouraging, yet NAAC's biggest challenge is the massive task of the assessment of over 16000 colleges and 390 universities. With the passage of time, it faces new challengessome are methodological issues and the rest relate to huge task pending before it. One of its prime challenges is

to work on continuous improvements in the assessment procedures whilst periodically reviewing and revising the basis of feedback received from the field resulting in evolving uniform national quality standards.

At present NAAC focuses on institutional accreditation. Now there is a growing demand for departmental accreditation (Subject Accreditation). In addition, with the entry of foreign players in higher education in the country, quality assurance of transnational education becomes a challenge and concern.

REFERENCES

Publications of NAAC:
- NAAC: A Decade of Dedication to Quality Assurance/11-2004
- Institutional Eligibility for Quality Assessment/2007/2008
- Guidelines for the creation of the Internal Quality Assurance Cell (IQAC) in Accredited Institutions/8-2004
- New Methodology for Assessment and Accreditation/2007/2008P
- Prof. S .P. Thyagarajan: Quality movement in higher education: role of sqac's & slqacc's: Seminar presentation at NAAC, Bangalore
- 07/2008
- Websites:
- www.ficci-hes2008.com/presentation/Day%20011-26th/paneldiscussion/HARanganath.pdf-
- www.qualityreserachinternational.com/tp/papers/stell.doc

B. S. Madhukar
Deputy Adviser, NAAC

Wahidul Hasan
Communication-cum Publication Officer, NAAC

Quality Imperative and the Problem of Pedagogy in Elementary Education : A discourse

Nitin Banerjee

INTRODUCTION

Quality school education has been the much debated topic of today. This results in parents running from pillar to post to get their wards admitted in so-called good schools where quality education is take for granted. In this race, barring a few govt. schools, privately managed schools surface as the first choice. It is time for introspection amongst those involved with govt. schools. Ironically, though they are better paid, yet the results remain poor. In this age of globalization, all endeavors are commercialized. And this sorry state of affairs cannot continue. The onus lies not just with teachers alone, but the entire support system, often headed by the senior officials. It is high time for all of them to sit together and introspect. After all, the days of colonial rule are over. We cannot carry on by placing the blame on someone else. In free India, the entire responsibility of success or failure lies upon us. So is it with education.

It is obvious that there cannot be education without quality just as there is no product without a minimum standard. This implies that quality is an *in-built ingredient in a process*. It lies at the core of education. But the omnipresence of quality assumes some pre-condition which may be termed as the *basic awareness of quality*.

The concept of quality must be objective with fixed parameters and quantifiable indicators. In the field of education, it assumes a larger perspective because education is a life-long process and is

the sole path to rapid economic and social development. Once something is learnt, it cannot be easily unlearnt. It will continue to multiply whether one likes it or not.

Quality, however is an elusive term. Everyone demands it, without being too clear as to what it is and how to attain it. This is particularly accented in the context of school education.

PRESENTATION

Quality in education is a multi-dimensional issue. It has:

- **cognitive dimension:** implies that education is not limited to formal education in the schools. It includes curriculum, transaction methodologies, evaluating practices, creating conducive atmosphere in the schools, etc.
- **social dimension:** involves concerns with developing values that are radiated in the school family. This is done in a natural way, without creating pressures or tensions.
- Physical dimension: is the developing of suitable infrastructure and allied facilities and services.
- **organizational dimension:** Schools are a social institution with a self-contained well-organized family inculcating clear roles for everyone involved with it. Everyone has to follow these roles in order to show its real character and identity.

National Council of Educational Research and Training (NCERT) has identified the following eight dimensions of quality of elementary education

- school infrastructure and other facilities
- management and community support
- school and classroom environment
- curriculum and teaching learning material
- teacher and teacher preparation
- opportunity time (teaching-learning time)
- classroom practices and processes
- learner's assessment, monitoring and supervision.

These are actually examples or 'indicators' to ascertain quality.

Quality has tended to be conceived not as what it actually is but as how it can be measured. That is why 'indicators' are needed for any discourse on quality. All those involved in child education might find these odd. This is why the indicators address the preoccupations of providers rather than those of teachers and learners.

In contrast, *when learners themselves are asked about educational quality they tend to talk not about test-scores,* but about the 'perceived experience of learning, dwelling specially on their attitude to the tasks set such as interesting, boring, easy, or difficult. This involves the degree to which they find the context of peer as well as teacher-student relationships supportive and rewarding. In the context of 'Education for All' or EFA, where student motivation and retention remain serious concerns, the preferred indicators are effective as much as cognitive and instrumental. Though focusing on effectively alone is as conceptually and empirically restrictive, just as in mathematics, the treating of test scores and educational outcomes are synonymous.

Here are some prototypical examples of the approach to quality through indicators:

- context of education
- financial and human resources invested in education
- access to education, participation and progression
- the learning environment and organization of schools
- individual, social and market outcomes of education
- student achievement

That gives the familiar mix of input, process and outcome which in one way or another, 'frames' most such efforts. 'The learning environment' and 'student achievement' indicators are:

- teaching time
- total intended instructional time
- student absenteeism
- computers in schools and their uses

- mathematics achievement in 4th and 8th grade
- students' attitude to science in 4th and 8th grades
- students' beliefs about performing well in mathematics in 4th and 8th grades.

So, quality schools have a positive and welcoming atmosphere, cooperative and caring relationships between staff and students. This is combined with a strong focus on student's learning, underpinning effective leadership, shared by many and led by the Principal/Head of the institution. They develop a strong partnership with parents and the community, communicate their shared purpose, high standards, encourage good values, undertake regular ongoing evaluation and are open and honest in sharing information.

A quality school is one in which -

- students treat each other, their teachers and school with respect; have a voice in the decision making; are interested and engaged in their learning; accept responsibility; receive feedback and encouragement from their teachers and feel cared for.
- teachers work together in unison and share ideas; feel valued and are given support to be innovative; employ and explore teaching strategies that are varied and personalized to meet the needs of all learners.
- administrative and support staff work as valued partners with Principals/Head of the institutions and teachers to ensure that students are supported in their learning and the entire school system work efficiently and effectively to support teaching learning.
- the school as a whole is committed to continuous improvement, a dedicated pursuit for excellence, forms learning partnerships within and beyond the school; develops plans and targets that address its goals; seeks feedback on its performance; uses data to reflect on its outcomes; reports openly and honestly.

The indicators in the 1994 study of European Commission on quality in teaching were based on the wholly reasonable view that the quality of education the student receives is conditioned by the kind of teaching he/she experiences, which in turn was defined as being depended upon:

- content knowledge
- pedagogic skill
- reflection
- empathy/understanding
- managerial competence of the teachers

The first two have high face validity: a teacher needs to understand what he/she is teaching and to have a concomitant skill. The list also includes:

- commitment
- love children
- set an example to the children
- manage groups effectively
- incorporate new technology
- master multiple models of teaching and learning
- adjust and improvise
- know the students
- exchange ideas with other teachers
- reflect

How to ensure that the vision of high quality education for every student is a reality in every school?

- effective leadership is critical for continuous improvement and building the capacity of the school community.
- developing a culture that supports continuous learning is based on the belief that all students can learn and all schools can learn. For staff, powerful learning comes from interaction with colleagues, getting honest feedback and having time to reflect upon practice and outcomes.
- shared vision, clear and realistic expectations and high standards. Assist all members of the learning community to

focus their efforts on what is important and strategic and to set goals and targets to be successful in achieving higher standards.

- commitment to and support for school improvement grows from shared values. Understanding learning involves the whole school community in thoughtful and challenging self-evaluation.

- moving from improvement to transformation: There must be a deep commitment to achieving high quality beyond continuous improvement. Transformational change involves completely new ways of organizing learning. Researchers believe this is necessary if schools are to achieve success in areas where they were previously unsuccessful. However, in order to achieve this, it is not only schools, which must be, transformed but also the other parts of allied organizations.

Achieving quality education is a shared commitment that requires genuine learning partnership between the state and regional offices, schools and community. It needs a strong partnership based on a common purpose to lead to new and better ways of supporting schools and Principals/Head of the institution in their educational leadership and management roles.

Six areas of Quality are indicated in the UNICEF report:

- appropriate, relevant and inclusive educational aims
- relevance and breadth in curriculum content
- actual time available for learning, and its use
- effective teaching styles
- appropriate languages of instruction
- regular, reliable and timely assessment both summative and formative.

THE CONFUSION AT THE HEART OF "QUALITY"

At the beginning, it is laid out that Quality is an elusive term. Some of the causes of confusion about defining quality involve:

- early models concentrated on input and outcome and ignored process

- later models tended to view educational process in an arbitrary and selective fashion. It isolates only those aspects, which are readily measured, regardless of their pedagogical significance.

- however, isolating such aspects conferred validity upon them, whether deserved or not. So, quality was reduced to quantity.

- other models, tried to move beyond the crudity of early indicators. They focused on the desired attributes of teachers themselves. But this introduced high levels of ambiguity whereby inference turned into an exercise in achieving the opposite.

- on closer examination, most nominated indicators of process of whatever persuasion are really input or contextual variables.

- in general, pedagogy has been made to fit the available measures rather than the other way round.

- where direct measures are not available proxies are used, and the proxies for process quality tend to be again outcomes or inputs.

- the framing of educational process quality indicators is rarely, if at all, justified by reference to research on learning and teaching.

INDICATORS OF QUALITY: WHO NEEDS TO KNOW WHAT?

Do policy makers really need to engage with matters like learning time, the management of groups, teacher empathy, the teacher's improvisatory skills and the quality of teaching learning materials? Are they competent to do so?

Five requirements follow from this, four about mechanisms, and one about equity:

- the debate about quality needs to attend closely to the question of who needs to know what at each level of the education system.

- second and commensurately, at each level people need to ask what within their zones of power and responsibility, they can

do or provide in order to help those working at school and classroom levels to secure high and consistent standards of teaching.

- if responsibilities for the quality of pedagogy are shared at different levels, it cannot be sufficient for indicators of quality to be confined to the vagaries of input, outcome or proxy process indicators at the topmost level of the system.

- fourth, if a multilevel is taken, then the indicators at each level should focus not on the school and classroom, which is usually what tends to happen but on the work of those at that level itself. Otherwise, concern for quality is deflected downwards. So for example at the level above schools it is as important to define and assess quality in teacher training as in teaching.

- although pedagogy and pedagogic quality are manifested in the decisions and interactions of teachers and learners, the very fact that others at different levels are interested in it signals that quality depends on much more than the teacher alone. If responsibility is shared culpability should be shared too.

The english school inspectorate, OFSTED commissioned an extrapolation of the 'Key characteristics of Effective Schools' from school effectiveness Research from a group of London University's Institute of Education. This came up with eleven factors in effective school:

- professional leadership of the head of the institution
- shared vision and goals
- a conducive and congenial learning environment
- concentration on teaching and learning
- purposeful teaching
- high expectations
- positive reinforcement
- monitoring progress
- pupil's rights and responsibilities
- home-school partnership
- a learning organization

Each of these was subdivided. Thus professional leadership included firm and purposeful, a participative approach and the leading professional, while purposeful teaching' was explicated as efficient organization, clarity of purpose and adaptive practice.

PEDAGOGY: DEFINITIONS AND FRAMEWORKS

Pedagogy is the observable act of teaching together with its attendant discourse of educational theories, values, evidence and justifications. It is what one needs to know, and the skills one needs to command, in order to make and justify the many different kinds of decisions of which teaching is constituted. Such a definition requires two subsidiary and complementary frameworks: one deals with the observable act of teaching, while the other with the knowledge, values, beliefs and justifications.

The framework for pedagogy included enabling ideas (on students, learning, teaching and curriculum), formatting ideas (on policy and schooling) and locating ideas (on culture, self and identity).

The framework for pedagogy as practice included three dimensions:

- the teaching act itself, (comprising task, activity, interaction, judgment) the form that teaching typically takes (lesson) and

- the contextual and policy frame (space and resources, student organization, time, curriculum, routine, rule and ritual) within which the act of teaching is set.

Principles and procedures for handling of matters pertaining to quality and pedagogy

- clearly separate both conceptually and procedurally the definitions of pedagogical indicators from the development of measures. Do not confine the indicators. Everyone's apprehensions of what teaching and learning are about can be measured. Exploit the indicator/measure distinction to reach a better understanding of pedagogy and pedagogical quality.

- abandon exclusive faith in the dubious nostrums of school effectiveness research.

- while the greatest need is to fill out process dimension of quality, the outcome dimension cries for attention too.

- do not try to plug the gap by the over-use of proxies which arises from too exclusive a concern with measures. If aspect of pedagogy is important then it should register in its own right. If it cannot be measured, that is because it is too complex, and alternative ways of monitoring it must be sought. The last thing we should do is ignore vital aspects of learning and teaching simply because they are not readily translatable into measures.

CONCLUSION

There are various factors and parameters of quality as perceived at different levels in the system of education. The four dimensions as referred to in the beginning of presentation of this module will serve as a guide. Effective management and leadership also count. It is a dynamic process; not simply input and output. When an institution is regarded as having quality, it means that everything that is done there, are in sync with the central objective: which is both clear and appears to be achievable. This generates a motivation and willingness to participate. The cohesive and congenial atmosphere radiates a halo and assures its indomitable presence.

Nitin Banerjee,
Principal (Retd),
Coordinator (Academic), SSA
UT Mission Authority
A&N Islands, Portblair

Towards E-Governance : Transformation of Orissa Minning Corporation Ltd.

Sanjeev Chopra

INTRODUCTION

OMC, like other mining companies, acquires mining leases and prospecting licenses for carrying out exploration, mining, processing and sale of mineral ore like iron ore, manganese ore, chromite, etc. in the domestic and export market. Ore material sold to the customers is mostly utilized by the steel, alloys, chemical and refractory industries.

OMC has acquired thirty-eight mining leases and three prospecting licences for different ore/minerals like iron ore, manganese ore, chromite, limestone, china clay, graphite in the state of orissa. The total resources estimated are 400 million tons of iron ore, nine million tons of manganese ore and twenty-four million tons of chromite. Currently, OMC has concentrated mining activities at sixteen mining leases and the annual output/production is 3.5 million tones of iron ore, 0.5 million ton of manganese ore and 0.7 million ton of chromite. All the iron, manganese ore and chromite mines are open cast mines except one chromite mine which is being developed as an underground mine. Besides, there are prospecting units which taken up exploration activities in different mines to delineate ore bodies and assess the reserve and potentiality of the blocks suitable for mining.

The mining activities in the twenty-three mines are controlled by six regional offices established in different parts of the state and

in turn are centrally controlled by the corporate office at Bhubaneswar. Apart from the mines and a sales office, for export of ore, OMC has a shipment office at Paradeep.

ICT INITIATIVES

Forty-five MoUs signed by the government of orissa during 2004-2005 for putting up a steel making capacity of about sixty million tonnes reposed great responsibility on OMC to ramp up its production capacity in the shortest possible time. Within two years a production target of ten million tonnes was to be met, which was almost a threefold increase from the existing figures. His rapid business expansion, which transformed OMC into the country's largest mining state PSU, placed a considerable amount of strain on the corporation's infrastructure. Though the corporation made optimal use of its existing resources to handle its increasing business volumes, its top management soon realized that they needed to scale up the infrastructure to consolidate their gains as well as effectively meet future business needs. Increasing competition, expanding markets, dynamically changing business environment, and rising customer expectations were the challenges for the corporation. In order to meet these challenges, the need was to streamline its business processes and practices, integrate functional areas to generate and communicate timely and accurate information, and share critical in-house information with suppliers, distributors, and customers. The constraints were many.

OMC undertook a series of steps to handle their increased business volumes such as cost cutting measures, optimal utilization of resources, as setup-gradation, computerized inventory management etc. The firm's top management, however, realized very soon that these measures were inadequate if they were to realize their vision of turning OMC into the numerous no mining firm in the country.

The management decided to take the route charted by information and communication technology.

THE OBJECTIVES

ERP Implementation during 2004–07

The need of the hour was to support the industrial growth of the state through enhanced production and timely deliveries keeping in mind the resource constraints. This required putting in place a world class system to upgrade and re-engineer the business practices in line with the expectations of the stakeholders. ICT was identified as a tool that can aid in achieving the targeted growth within a short span without any substantial resource addition in terms of manpower and production machines. The enterprise resource planning solution was found them most appropriate mechanism to achieve the objective in the shortest time. With built - in best practices and business processes, ERP was then need of the hour to fulfill the objective of taking OMC towards higher standards of operational excellence and corporate governance.

Integrated and re-engineered Business Processes

The basic functional areas and their integration were to be undertaken for effective monitoring and transformation of the corporation's activities. Processes of the five functional modules; finance and controlling, materials management, sales and distribution, sales operation planning, quality management in sales and procurement were to be revised and integrated.

Process standardization was not an after thought; it was woven in to the implementation architecture as an integral part right from the beginning. Human resource activities and workflow automation were proposed to be brought under the ERP umbrella during subsequent phase. Most of the re-engineering was driven by Key Performance Indicators (KPIs) which dictated the requirements to streamline organizational processes such as:

- sales cycle was to be reduced from weeks to a few hours.
- stock position was to be determined at the end of each day for better management of production.

- inventory management has to be made more efficient with central administration and stock evaluation.
- reorder levels, economic order quantity, stock evaluation to be incorporated, a uniform material code was to be adopted throughout the organization for the ease of material management.
- employees were to be provided on-line information on their provident fund accounts, salary statements, leave balance.
- loan sanction and disbursement was to be brought down from months to hours. Appraisal process was to be standardized and made user friendly.
- manual monitoring and escalation were to be automated through workflow.

Overall improvements in all critical processes and key functional areas were considered imperative by the steering committee constituted to oversee the implementation of ERP. The other key functional areas where ERP solutions were deemed necessary were in :

- handling increasing business locations and expanding volumes, financial transactions, effective monitoring, control and better decision making.
- streamlining sales processes and enhancing customer satisfaction.
- streamlining the materials procurement process and vendor satisfaction.
- improving production scheduling.
- integrating functional are as such as sales, materials procurement, financial accounting & controlling and production planning.
- real time inventory system for materials, finished products in place of manual inventory system.
- reduction of manual effort, redundancy.
- integration of head office, regional offices, mines and camps.

Enforcement of Standardization

Baring few HR manuals, most of the procedures and processes adopted by the corporation were not documented. This resulted in presumptions and assumptions left to individual discretion. For any quantum growth, standardization was of prime importance. Moreover the stakeholders had to be informed and educated on the processes and their impact on the overall performance of the corporation. Identifying process owners for cross-functional and cross-location processes was a daunting task. Moving from an unaccountable environment to an owned process environment was most challenging.

Radical Shift through Change Management

The acceptance of users and employees was to be established by widely disseminating in formation regarding the benefits of ERP. Workshops, training programmes, corporate communication besides other financial benefits had to be put in place for any such activity which brings about systemic changes in the way business is conducted. The employees were to be taken in to confidence for all radical changes in operating procedures. Moreover the fear of job cuts after ERP implementation was to be mitigated by educating the users. Even unions and other interest groups were to be convinced of the benefits of ERP in the long run and were to be taken in to confidence. With the average age of employees touching forty-six, it was a herculean task.

Performance monitoring through KPI

Key performance indicators need to be formulated for effective measurement of the proposed improvements in over all operation of the corporation. To judge the performance and efficiency of the organization after the ERP implementation and to arrive at parameters for measurement of the impact of ICT, key performance indicators were formulated with suggested parameters that could be used to measure the improvements in a scientific manner.

STRATEGY ADOPTED

Strategic architecture

Drawing lessons from successful ERP implementations from other industries, the top management of OMC instituted organizational changes in tandem with the technical implementation of the ERP system. An active hands-on daily review approach was adopted by the top management to guide the entire ERP implementation process. The appointment of a senior management executive as the project manager with the IT department under a separate head helped the corporation stay with in planned implementation timelines. A weekly project review was conducted by the steering committee and their members actively involved themselves in process design. High priority was accorded to all ERP related activities. Continuously updated hierarchical training programmes were instituted wherein consultants trained key-users and the key-users in turn trained the end-users. A 'learning centre' was set up in the head office to leverage the knowledge gained with ERP system enabling all employees to know more about ERP, its benefits and carry out dummy transactions in the development server. Employees were kept a breast of developments in the ERP projects tatus through regular formal and informal channels of communication. The value of accurate data input and hence reliable information output from the ERP system were emphasized continuously in order to maintain data integrity. A dedicated helpdesk was set up in order to handle queries from users across the different business locations.

PHASED IMPLEMENTATION

The ERP Implementation was undertaken in a phased manner. The first phase of implementation covered the activities of the corporate office and two regional offices. The materials management, finance and controlling, sales and distribution, production planning and sales operation planning were implemented in this phase. Four other regional offices were brought under the purview of ERP during the extension of the first phase. The second phase covered rollout of the existing functionalities to eight mining locations. During the third phase additional functional areas such as asset management and HR payroll were brought under ERP. The fourth phase was planned for implementation of the entire HR functionality as well as workflow.

During the upgrade phase under progress, there will be technical upgrade to the latest platform.

ICT INFRASTRUCTURE

The prerequisite was to develop a world class ICT infrastructure which could cater to the connectivity and communication requirements of the entire corporation as well as sustain the overall communication growth for ERP needs. Plans were formulated to put such infrastructure in place, starting from high-end servers, network equipment to desktop and laptop systems. Support of other state government and cntral gvernment agencies such as Orissa Computer Application Centre (OCAC), BSNL, NIC, STPI and STQC was sought for installing the ICT infrastructure. The plans were to put the entire ERP infrastructure in place in a phased manner. First the infrastructure of the head office and two out of six regional offices was set up. During the next phase, the infrastructure was established at four regional offices. BSNL authorities were persuaded to provide leased lines to certain locations exclusively for OMC on rent and guarantee scheme. Considering the inaccessible mine locations, VSATs were found to be technically feasible for most locations. Support of STPI was sought for extending connectivity to the remote mine locations. Plans were put in place to see that all the requisite facilities including furniture and fixtures were made available at these remote locations prior to the roll out of ERP. Exclusive ERP halls were set up at all the locations to facilitate smooth and uninterrupted operation of the ERP.

The results can be easily observed from the present infrastructure setup in OMC. Fifteen remote locations are now seamlessly integrated with the corporate office. Hybrid networks

comprising of leased lines, ISDN lines, VSAT, wireless and internet have been used for the interconnection. More than 300 desktop systems, fifty laptop systems, two mbps internet connectivity, high-end servers and video-conferencing systems are successfully driving the ICT infrastructure. Power and communication infrastructure at most of the mines and few regional offices had to be built up from scratch in order to sustain the ERP operation. Plans were formulated in a strategic manner to extend communication and power facilities to all the locations. Extensive discussions with power and distribute on companies were initiated to ensure uninterrupted functioning of the systems. This required persistent follow-up at the top management level and the results were indeed gratifying. For instance, Khandadhar mine was connected to a power source after fifty years of operation.

INFORMATION AVAILABILITY

The roll-out of ERP was to ensure that data is captured at the generation points. Rather than a historical entry of information, on-line and real time information availability was the need of the hour. MIS reports were to be made available to decision makers and top management for faster, accurate and effective decision making.

HELPDESK

With phenomenal growth of ICT usage, setting up help desks with escalation and monitoring mechanisms was the most effective tool for stabilizing the ERP operation. Key-users were provided internet connections, laptops, and mobile connections for any time, anywhere support. Helpdesks were set up in the head office for constant support to the users and top management. Monitoring and escalation mechanisms were put into place for each functional area with regular reviews. User feedbacks were recorded and monitored for any processed efficiencies and improvements.

KNOWLEDGE UP-GRADATION AND CHANGE MANAGEMENT

The strong support for change management was evident from the on going communication with in the organization at all organizational levels throughout the ERP implementation cycle. OMC instituted steps to ensure that its organizational culture changes in tandem with the ERP system implementation. Though there was strong support for the performance parameter-user satisfaction–OMC put in place change management processes to ensure continued high levels of user support and hence user satisfaction. Holistic training was given to employees targeting the business unit level (not just the ERP screens and reports) and employees were tested to ensure that they have received the appropriate ERP system training. The project group spearheaded the use of benchmarks to identify cutting-edge ERP techniques and regularly organized cross-functional discussions. Suggestions were invited from multiple employee levels on ERP and organizational improvements. Monthly award was given to the employee providing the best suggestion.

Training programmes, workshops, discussion groups, brainstorming sessions provided the necessary knowledge upgradation for the employees and the implementation. Learning Centre set up at the corporate headquarters hosted all such activities of knowledge dissemination.

Besides upgradation of knowledge of end-users in functional areas, basic computer skills to the end-users was also provided through external support. The users were to be trained in basic operating systems, office automation software, web browsers, mail applications etc.

In-house competitions were held in order to create awareness as well as generate enthusiasm for the ERP project among the workers. A suitable name was solicited for being assigned to the ERP project and the name 'SPANDAN' was selected from among a number of suggestions. Abi-monthly ERP newsletter was published as an attempt to demystify ERP and spread awareness

regarding the benefits of ERP implementation besides spreading the message of the commitment of the top management. Handouts explaining the basics of ERP, its benefits, and the objective of ERP implementation in OMC were circulated to all employees. Awareness camps were organized at the regional office and at the mines.

RESULTS ACHIEVED

A survey conducted by IIM, Bangalore indicated overall improvements in key performance indicators across the business unit as a result of ERP implementation. Early visible gains from the implementation were mainly informational in nature with strong support being indicated for increased information visibility and information quality. The findings also suggested that streamlining, rationalization, integration of business processes and transactional efficiency were other visible informational benefits accruing to the corporation.

EFFECTIVE USE OF INFRASTRUCTURE

Computing resources were shared by group of users leading to effective utilization. Use of network technology ensured such sharing of resources and the peripherals. During the planning stage for installing ICT infrastructure, different mine locations were clubbed. Instead of replicating the infrastructure at all mine locations, all mines in one area were grouped and connectivity and ICT infrastructure were extended to them, resulting in substantial savings. As against twenty-three mine locations, the connectivity and infrastructure was made available at eight mines. Directives from the top management ensured free access to idle resources by any user. Resource allocation was based on needs and workload. Up-time reports were monitored regularly to check resource utilization to the maximum possible extent. The escalation mechanism ensured availability of adequate computing resources for the e-governance environment.

SIMPLIFICATION OF PROCESSES

Domain expertise was essential for the smooth and errorless operation of the ERP application. All users were imparted functional training, organized at Xavier Institute of Management, Bhubaneswar. Brainstorming sessions among functional groups, regional heads, mine heads were held for finalization of the business blueprints. During such sessions, process improvements were given primary focus. The results were reflected in simplification of most of the processes. Few examples are cited for information:

- loan sanction and approval process: Policies were framed to accept on-line applications from employees. Eligibility norms were checked by the system automatically. Users were relieved from furnishing voluminous documents for their loan requirements. The earlier restrictions for application during a particular period of the year were changed to facilitate anytime application. Approvals are now given on line and disbursements are made though on-line cheque printing. Confirmations on loan balances are also available to the employees instantly.

- the sales order process at the corporate office for lifting of material has been completely eliminated and contract notes are now adopted for delivery.

- material master preparation with material code assignment leading to the use of uniform codes across all business locations has facilitated scientific inventory management.

- enhancement of approval limits, adaptation of uniform procurement policy across the organization depending upon the financial delegation resulted in faster processing of requisitions and procurements for materials and services.

- financial approval for procurement of materials and services is now accorded on-line through the system through release strategy as per financial delegations. Workflow helped in automatic forwarding of information to the next level.

Monitoring of approvals has also been incorporated as part of the workflow.

DEPLOYMENT OF SOLUTIONS USING TECHNOLOGY

ICT both as a technology and as a tool brought radical transformation in the functioning of the corporation. The use of technology produced instant results through improved efficiency, reduced turn around time and on-line information. Network technology, through the use of VSATs, leased lines and ISDN Lines established the communication infrastructure for the corporation. Fibre optic channels, channelized circuits, and managed leased line networks established uninterrupted operation of the network. Virtual private networks were used for reliable and secured data transfer through the Internet. Leased Internet and broad band Internet connections connected the corporation to the external environment for information transfer.

Wireless technology was used to extend connectivity to specific locations, personal computers and laptops. Wireless zones were established in different locations of the corporation for mobile users. The state of the art RFID technology and bio-metrics were deployed for the employee time and leave management system with its integration to HR payroll.

Use of multi processor systems, hot plug devices, RAID controllers, storage networks ensured reliable and un-interrupted operation of the production environment. Remote management was effectively used for system administration.

STAKEHOLDER ACCEPTANCE

The benefits realized through the e-governance initiative were widely acclaimed by the stakeholders. Now customers get delivery orders in time through e-mail, which were earlier dispatched by post consuming eight to ten days. Customers are now sent monthly account statements resulting in transparency and

faster reconciliation. Customer payments are now tracked on a real time basis. Vendors' orders are now monitored in the system not only by the end-users but also by the top management for any delay in payments as well as delivery.

DISCONTINUATION OF INEFFICIENT ADMINISTRATIVE PRACTICES

A few Illustrative Examples are given Below:

- leave application and approval processes involving processing of manual applications, computation of leave accrual, leave balances.
- manual personal information maintenance dispensed with.
- manual processing at the weigh bridges has been completely eliminated.
- file movements for budget and financial concurrence dispensed with.
- manual maintenance of bank books, cash books, ledgers, sub-ledgers has been eliminated.
- manual maintenance of goods receipt registers, stock registers, issue registers and other ledgers is done away with.

AUTOMATED MONITORING AND ESCALATION THROUGH WORKFLOW

Through workflow, the business processes for the corporation's activities have been automated and each step of a business transaction is easily monitored and regulated. The system alerts users and directs traffic by sending work items. Users are delivered their work items in their mailbox for action. Built in escalation mechanism ensures timely execution of the processes. Few workflows implemented are cited for reference:

SALES AND DISTRIBUTION

A sales OBD (delivery order) is valid for ten days and on the eleventh day the system triggers a warning message to the creator

of OBD for carrying out of PGI (Post Goods Issue). A warning message flows to the accounts head and the regional head in the system on the tenth day from the actual Goods Issue date (PGI) of the OBD if invoice is not created.

MATERIALS MANAGEMENT

- message to the creator of Purchase Requisition (PR) once Purchase Order(PO) is created, and Message to the creator of PO, once PO is released.
- message to PO creator & concerned end-user at mines when Goods Receipt (GR) is not made within seven days of delivery date.
- message to end-users at Mines and to regional heads when safety stock level of spares/ materials goes down.

PURCHASE PLANNING–SALES OPERATION PLANNING

- message regarding monthly production target vs achievement.
- message if invoice verification is not done after service sheet entry within seven days.
- message to all concerned in respect of daily production data entry made material code and location wise daily.

FINANCE AND CONTROL

- negative bank balances: Message to be triggered once a bank balance reaches negative.
- delay in doing Invoice Verification (MIRO) by FI end users after goods receipt (MIGO) is done by materials management end user: Message is generated for invoice verification pending beyond seven days of goods receipt.
- delay in releasing payment to vendors after the due date: Message is triggered for delay in payment beyond fifteen days of goods receipt.
- delay in adjustments of down payments of both vendors and customers: If down payments released to vendors or received

from customers are not adjusted/cleared within a stipulated time then, a message is triggered.

- period-end closing: If period-end closing for a particular period has not been done within a stipulated time-frame, then a message is delivered to the inbox of the concerned offer.

ENHANCEMENT OF PRODUCTIVITY AND EFFICIENCY

The ERP implementation has resulted in increased productivity with the available manpower. Reengineered processes have resulted in more operational efficiency with reduced manpower deployment. For example, the financial reconciliations which used to take months with the involvement of the entire accounts department are now done instantly by the click of a button.

The following information/facilities are now available real-time and online which have helped bring about a sea change in the level of efficiency and work culture.

- real time and updated stock position of various mines.
- production plan vs achievement available at any point of time.
- procurement process of material/equipments & services streamlined/centralized: Purchase orders & contracts are released electronically.
- sales order tracking and customer satisfaction.
- auto printing of cheques in favour of vendors.
- automatic reflection of accounts payable/receivable for all procurement/sales
- structured GL accounts facilitating automatic posting in appropriate ledger and sub ledger.
- online tracking of cash and bank balance for better financial control.
- on line tracking of mine wise and head wise expenditure incurred.

- automatic calculations of asset depreciation and generation of fixed asset register as per Companies Act, 1956.
- automatic integration with finance and other modules.
- payroll processing including wage bill processing of PR miners, DRMP & other workers of OMC in the system. Automatic posting of Income tax, CPF etc.
- MIS reports generated, provides instant view on the status of various information/data helpful in decision making.
- use of electronic mail using intranet and Internet.

SERVICE DELIVERY–STAKEHOLDER CENTRICITY

Vendors

Vendor interface has witnessed substantial improvement with implementation of centralized procurement. Order placement as well as tracking of deliveries and payments are now undertaken electronically.

CUSTOMERS

Customers have been the major gainers of the e-Governance initiative. Allotment to customers is now created in the system and delivered electronically. The delivery order is available instantly at the mine locations. Bills are sent to the customers immediatelyaftercompletionofdelivery.Customerbalancesarecom municatedeachmonthafterraisingofinvoices.Settlementofpayment s can be undertaken instantly with real time generation of invoices and instant payments are being realized through bank transfer.

RAISING AGENTS

The raising agents derive multiple benefits from the ERP system implementation. Stock availability of explosives and other materials help in planning and execution of production targets by the raising agency. Service entry created in the system enables faster release of payments as well as providing enough feedback for improvements in production. Real time production entry of the raising agents reflects accurate unsold stocks based on which payments can be claimed by the raising agent as per terms and conditions of the contract. Automated billing not only eliminates any manual intervention but also ensures faster payments.

EMPLOYEES

The HR implementation has resulted in direct benefits to the employees of the corporation. Cumbersome manual processes have been eliminated and employees have been empowered through self-service features for on-line personal transactions besides information access. Anywhere anytime access to the ERP system has been facilitated through Internet and wireless connectivity. Employees residing in the Corporation Colony have been extended 24x7 system access. Internet access has been extended to these employees and even their family members.

PERIPHERAL DEVELOPMENT PROGRAMMES (CITIZEN CENTRICITY)

Increase in turn over and profits have helped enhance the contribution of OMC towards various peripheral development programmes. OMC is the only PSU of the state spending 5 per cent of its profit in scheduled areas for the benefit of general public. The formation of a society 'OMC MAITREE' in 2006 symbolizes OMC's commitment towards the social obligations. The commitment to corporate social responsibility is adequately reflected by the fact that the contribution which was only Rs 50 lakh in 2003-04 and Rs 38 lakh in 2004-05 shot up exponentially to Rs 39 crore in 2005-06 and stood at Rs 16 crore in 2006-07.

ACCOUNTABILITY AND TRANSPARENCY

Implementation of ERP has brought in more accountability driven by the process approach. Process standardization resulted in accountability. Before any improvement of a process, it has to be

assigned a process owner who shall be responsible for the process management and for the determination of bottlenecks in the existing process. The process owner has been made accountable for any process related issues, be it overall process improvement or for delays in achieved outcomes. The owner has also been made accountable for the process measurement and feedback besides training of other process users. This has resulted in greater accountability.

Audit trails available in the system provide facilities to track the entire transaction from start to finish.

The details of transaction initiator, time of transaction, flow of transaction to different users, details of modifications carried out including the objects modified with values, total transaction time can be easily monitored in the system. User logs and audit logs provide relevant information on system usage. This supports accountability requirements for any e-governance system. Key users carry out regular audits in the system to check any wrong and incorrect postings.

Internal and statutory audits in system are being regularly undertaken for the determination of transaction errors and other deficiencies. Auditors and internal users have been trained through in-house support for conducting system audits.

VIABILITY AND SUSTAINABILITY

Successful transformation of OMC through ERP implementation has justified the decision of the top management go for this ambitious project considering the background of the corporation as a state PSU and the level of ICT prevalent at the time the decision was made. With turnover exceeding Rs1000 crore mark during 2006–07, an investment of 1 per cent of the turnover can be justified, considering the benefits realized from improved production and efficiency with reduced manpower.

Increasing the production with diminishing manpower strength has been a remarkable achievement. Implementation of stand-alone functional solutions might not have resulted in true

benefits of information integration. Effective use of ICT and ERP has rather resulted in surplus manpower resources which have been effectively redeployed in new areas of operation.

Sustainability for technical support has been ensured through adequate knowledge transfer to the project team. The project team members have been successful in respect of some modules to operate and maintain the ERP environment without any external support. Second lines of key-users and end-users have been formed to take care of any exigency. Support of the top management has ensured adequate operational and financial support for the project, considering the rich dividends the projects has already generated.

LESSONS LEARNT AND DOCUMENTATION

The success of the project established the fact that adoption of best practices, effective change management, radical innovation and top management support are the key driving factors for the e-governance transformation.

INSTITUTIONALIZE BEST PRACTICES

Adoption of best practices for project management, process transformation and process mapping has resulted in the successful transformation of the corporation. Systems are in place to ramp up production and improvised processes are well grounded with the threads of transformation running across the entire corporation. Re-engineered and efficient processes have replaced an entire gamut of manual and undocumented processes. Process ownership has resulted in accountability and transparency. Arbitrary processes have been eliminated from the organizational practices. The activities of all the business locations are reviewed regularly to ensure that the best business practices are strictly adopted and actively monitored for any violation.

CHANGE MANAGEMENT

The acceptance of stakeholders was the most crucial factor for the successful transformation. Scientific change management

practices were adopted for disseminating the benefits of ERP. Workshops, training programmes, corporate communication besides financial benefits facilitated knowledge transfer thus bringing about the desired changes in the corporation work culture. OMC instituted timely and suitable steps to ensure that the organizational culture changes in tandem with the ERP system implementation.

INNOVATION

OMC is the first mining company in the country to attempt implementation of Enterprise Resource Planning. This, in itself, was a daunting prospect as there was no experience/success story/precedent to fall back upon. Coupled with this, ERP implementation had reportedly a high rate of failure in government run organizations.

In this backdrop, innovation a teach step of the implementation process was the order of the day. Brainstorming sessions and Business Blue Print Workshops were organized over a period of three months, not only to assess the task at hand but also the existing business processes and how we can leverage global best practices to transform the corporation into a world class mining company. As a result, extensive customization was taken up with the close involvement of not only the functional users, but also the top management. Innovation was the common thread running through the entire process of implementation. To cite an example, while implementing the HR payroll module, it was found that the calculation of wages of the piece rated miners, who are being paid as per their daily output, was becoming a bottleneck. Depending upon the wage rate for different type of minerals for raising and excavation of waste materials, the pay roll was customized for calculation of total wages in the system itself.

TOP MANAGEMENT SUPPORT

Top management support has been instrumental in bringing about the radical and successful transformation. Starting from project inception to monitoring, there has been undeterred support from the top management. Regular reviews, enforced escalation mechanisms and top management accessibility were ensured for completion of the projects. The Managing Director instituted a three-tier meeting structure, viz. daily meeting of the project managers of OMC and the implementation partners, weekly meeting of the project team comprising of key-users, consultants of the functional modules and a monthly meeting of the steering committee which included the heads of different departments at the corporate office.

DOCUMENTATION

Scientific documentation process has been adopted for the project. Project planning, business blueprints, 'as is' process, 'to be 'reengineered process, ownership and responsibility assignment, resource allocation charts, review and escalation reports, change management documents, system documentations, project architecture are all documented and the repository of all such documents has been made available on-line to all the stakeholders. Any process change, rescheduling, system modifications, customizations has been documented providing complete information of the transformation.

Document management practices have been adopted for effective control, release and change of documents besides access control.

TRANSFERABILITY AND REPLICATION

The well documented project plan, business blueprint documents, realization strategy, project management guidelines, infrastructure setup procedures, change management practices and knowledge upgradation techniques can be adopted by any sector with similar mining production environment to transfer it to an e-governance environment. Other sectors can also benefit from the project experience of Orissa Mining Corporation, barring the business

processes exclusively customized for its mining operations.

Successful execution of the different phases of ERP implementation was based on the detailed and indepth exercises carried out during the first phase itself. Due to a scientific and process-oriented approach, replication of the practices adopted by OMC can be effectively utilized for ERP implementation by any organization and more particularly by government sectors in so far as the change management strategies are concerned.

With the success story of ERP implementation spreading across the mining sector in the country, other state and central public sector undertakings have already started seeking feedback as well support from OMC for their own implementation. Besides, the ERP product vendor has also proposed to document the success story of ERP implementation in OMC for communication to media, analysts and leading corporates across the globe.

CONCLUSION

The adoption of ICT and implementation of ERP in OMC has been are sounding success making it the first mining company in the country to do so. The achievement becomes all the more remarkable considering that OMC is a PSU in the state sector with its attendant constraints and restraining factors. The average age of the employees was forty-six years with no regular recruitment since 1992. The corporation was also afflicted with a number of pressure groups which wanted the legacy system to continue considering the opaque work environment. In this backdrop, to attempt implementation of this state-of-the-art solution was indeed a daunting task especially with hardly any computer literacy among the employees. The various stakeholders especially the customers, vendors and employees were also a harried lot, having to run from pillar to post for even routine transactions. Implementation of ERP has brought about as ea change in the functioning of the corporation in fusing total transparency in all its operations and is now being commended all over for this e-governance initiative.

It is not merely automation but the best business practices have been mapped so as to provide maximum satisfaction to the stakeholders. The primary task before the management was to motivate the employees to adapt to the new system which was achieved by undertaking an extensive corporate communications exercise besides putting in place a suitable incentive mechanism.

As a result, even the employees on the verge of retirement enthusiastically learned the nuances of the system and offered suggestions to make it more user-friendly. A series of workshops were organized to elicit their views and give them a sense of being stakeholders in the evolving system.

As a result of the implementation, the customers are able to get timely allotments leading to increased turnover, vendors are receiving timely payments resulting in timely receipt of materials resulting in reduced costs and employees have been empowered to undertake the routine transactions -(leave, loans, self-appraisal etc.) online leading to a happy, satisfied workforce.

Sanjeev Chopra
Managing Director
Orissa Mining Corporation
Currently Dy. Director (Sr.)
LBSNAA, Mussoorie

Quality Systems Installation in the Apex International Trade Promotion Organisation of India - FIEO

G.P. Upadhyaya

THE CONTEXT : THE ORGANIZATION AND ITS ACTIVITIES

Federation of Indian Export Organisations, popularly known as FIEO, is the apex body of all Export Promotion Councils, Commodity Boards and Export Development Authorities in the country. The organisation was set up by the ministry of commerce, government of India in the year 1965 with the objective of promoting India's exports. FIEO serves as a platform between the Indian exporting organisations and the government. Directly and indirectly FIEO represents the interests of over one lakh exporters in the nation. As set out by the foreign trade policy of India, it serves the exporting community as an Export Promotion Council. The status holder exporters: the premier trading house, star trading house, trading house, star export house and export house, all recognized by the Directorate General of Foreign Trade (DGFT) based on their superior performance have the privilege to register with FIEO. Non-status holder exporters from any product or service may also register with FIEO. Registration of exporters with the export promotion councils entitles them to claim the various benefits provided to them under the foreign trade policy of India.

12000, direct members of FIEO are professional exporting firms spread across the nation from Jammu & Kashmir to Kerala and from Maharashtra to the North East representing every sector of the industry like engineering, gems & jewellery, chemicals and pharmaceuticals, handicraft, spices, coir, rubber, tobacco, marine, agriculture etc. On the other hand, exporters from other services sectors-travel and tourism, education, research and development, hospitals etc. are also registered.

FIEO's prime activities include registration of exporters and issuance of Registration cum Membership Certificate(RCMC); take up/follow-up exporters' issues with the respective government departments at state and central level; organise open house meets and interactive sessions with the government officials to help resolve exporters' issues; submit pre/post budget memorandum to the ministry of finance; submit pre/post foreign trade policy suggestions; organise exhibitions and buyer-seller meets in India and abroad; disburse Market Development Assistance (MDA) on behalf of the department of commerce; draw attention and provide suggestions to the government of India on various aspects of international trade; enter into MoUs with domestic and international organisations to further the objectives of FIEO.

In order to provide services across India FIEO has its offices at ten locations - Delhi, Kanpur, Kolkata, Bhubaneswar, Shillong, Mumbai, Ahmedabad, Chennai, Hyderabad and Bangalore.

OPPORTUNITY/PROBLEM :
Pre-initiative status of the area/ domain in which quality initiative was undertaken; reason(s) for taking the decision to start a quality initiative…

In a service oriented organization, timely delivery of quality service is hallmark. Initially services were provided to the members as per the practices learnt through experience as no documented procedure, no defined time norm for service delivery, difference in processes and practices for delivery of service, lack of system to monitor service delivery, a systematic and uniform channel to record and address infrastructural issues to ensure quality delivery of services. Due to lack of documented system responsibilities even for routine jobs could not be entrusted to

lower rank officials or staff. The senior officials were occupied with routine daily jobs finding no time for innovation and or good export services. The process of assigning specific objectives and targets to employees and then a system to measure the achievements was not in place.

In order to ensure the organization work professional with uniform service across all departments it was felt to fix time norms for service deliveries and documentation for work processes. ISO 9001:2000 was seen as right choice for achieving these much needed objectives as well as enhancing the image of the organization both in domestic and international arena. Hence, a proposal for ISO implementation was mooted by the secretariat which was subsequently approved by the managing committee (the Board) of FIEO.

To start with very basic services were targeted for quality systems installation.

Another reason to go for quality systems installation was to show case to the exporting community and motivate them to go for quality certification so that the benefits make difference in the field of competitiveness internationally.

PERSONS INVOLVED IN THE DECISION MAKING PROCESS

The process of quality systems installation followed the top-down approach. The Secretary General and the Director General of the organisation took the lead and appointed a Management Representative, one of the officers of the organization, to carry forward the process of identification of systems improving upon the existing systems, coordinating with various departments, and documentation. An external consultancy firm was appointed to assist in documentation of the systems as per standard of ISO, creating awareness about ISO amongst officers and staff across FIEO, implementation of the systems, identifying the internal auditors, conducting auditors training, internal audits and identifying the weak areas. The departmental heads along with the

director general were actively involved in business process re-engineering, finalization of documentation and implementation of systems.

AIM, GOAL(S) AND OBJECTIVES

The first and foremost aim was to document the existing processes, undertake business process re-engineering, remove redundancies, bring in efficiency in the systems, delegate powers at all levels for quick decision making, collectively setting annual targets and objectives, measure achievements, monitor and measure work processes, continuously upgrade the processes to get these evolved, ensure uniform service quality and timely delivery across all FIEO offices. Exporters' feedback and complaints about FIEO's services to be continuously recorded and acted upon to ensure continuous improvement in FIEO's services.

SETTING THE SCENE :
Pre-initiative activities, e.g. engaging a consultant, training of personnel, constitution of quality teams/ task forces, deciding quality/success measures and instruments

A Consultant possessing experience in designing quality systems was engaged to facilitate FIEO in preparing the necessary documents, guiding through the steps involved in ISO certification, create awareness and education across FIEO offices on quality systems and ISO etc. A task force involving all the HoDs in head office and northern region office under the direct supervision of the director general was created to instill the quality drive in FIEO. One team was formed directly under the control of director general. The management representative took the responsibility for coordination and finalizing the documents.

THE EXPERIENCE :
How did the institution go about? What did it actually do?
The mission for quality systems installation began with multiple

awareness programmes on quality and ISO systems at the head office and northern region office in New Delhi, eastern office at Kolkata, western region office at Mumbai and the southern in Chennai. Since a specific quality policy statement was not available, all the officers and staff were encouraged to draft and submit a policy statement for the organisation. Working out various drafts a common quality policy was prepared and documented and got approved by the Management and then circulated to all offices.

All the departments were simultaneously asked to document the detailed steps followed by them while completing the various processes. Based on the documents submitted by the departments an optimal process was documented deleting the redundant steps, simplifying the processes, fixing responsibilities and delegating powers at lower levels. Forms and approval processes followed by various departments were studied and further simplified. The officers and staff engaged in each of the processes were actively involved in business process reengineering. Responsibilities were fixed on the HoDs to come out with the final process documents.

The process documents and associated forms thus finalised were circulated across FIEO offices for their feedback. Based on the feedback the final documents were crafted and implemented across FIEO.

Thereafter, internal auditor's training was provided to every HoD at FIEO head office and FIEO regional offices. Internal audits were then conducted at the head office and the regional offices with the help of the trained internal auditors after six months of the implementation of the re-engineered processes to identify the gaps.

Management review meetings were held to identify the various issues in implementing the modified processes: to understand resource constraints, to review targets and achievements, to measure performance of the re-engineered processes etc.

When the processes were found to be working satisfactorily, a certification body was identified and invited for the final audit at head office and the regional offices. The certification body then certified the processes.

Presently monthly management review meetings are held by the respective FIEO offices. The minutes are discussed at the head office and the issues are sorted out. Every six month management review meetings are held at head office where the regional officers and HoDs are invited. The internal audit findings are discussed and targets and achievements are, reviewed. To measure the output of the various processes data collection formats were designed. Samples are collected six monthly to measure the performance. Deviations are discussed at the management review meetings and preventive and corrective actions are taken to ensure quality services to the exporters.

OUTCOME AND IMPACT:
What was the result? How did it affect/improve the area of activity chosen for improvement?

Some of the major achievements of implementation of the quality systems have been:
- uniform service delivery norms practiced across the offices
- time delivery norms set and exporters get their services in time
- targets and objectives have been fixed
- professionalism came into the functioning of the organization
- processes are reviewed regularly measuring their effectiveness in the fast changing environment
- routine jobs entrusted to lower levels freeing the officials for innovation
- streamlined processes made service deliveries satisfactorily
- outputs are continuously monitored through internal audits and data analysis.
- additional activities are identified for execution
- transparency in the working
- a sense of pride among employees

LESSONS LEARNT :

DO'S AND DON'TS. **Conceptualisation of good practices and pitfalls to be avoided**

To achieve success through quality system installation in any organization, the quality drive requires top down commitment. Dedicated involvement of the top official is the only answer for the improvement.

Acceptance of "quality" in an organization at all levels has to be felt. Hence, a mass movement within the organization is absolutely must for successful implementation of ISO.

Inclusive planning is the only way for success else there are full chances of rejection of the reengineered processes within the system. The benefits of the reengineered processes vis-à-vis the older ones are to be clearly explained to all specially those who have direct stake in them.

More user friendly systems need to be targeted first for trial and implementation. Thereafter other systems should follow.

Continuous monitoring of the available infrastructure to achieve the targets and objectives is necessary. Continuous up-gradation of human resources with changing organizational needs has to be ensured.

Process documentation should be continuously reviewed and kept at optimal level.

FUTURE PLANS :

How are the lessons learnt going to be taken care of in the future

More processes needed for verification in the system. The time norms are to be gauged to ensure faster delivery of services. However, these will expect greater commitment from the employees. Software tools are being developed and applied to help the employees in effective management of their processes. The documentation will be done automatically through software tools. So employees remain free from maintaining it. The software tools are expected to further improve the efficiency of the system.

Motivation of the employees is necessary in the process of quality system implementation and it can sustain through the regular boosting by top management.

ISSUANCE OF REGISTRATION-CUM-MEMBERSHIP CERTIFICATE (RCMC)

In the absence of a documented process the method of processing applications undertaken by lower level officials varied from one FIEO office to another. Each one tried to remain cautious while issuing RCMC. Some of the offices raised deficiencies while others did not. The numbers and reasons for deficiencies varied. This delayed the process of issuance of RCMC in some cases. Further, the authority to verify and sign RCMC was vested in top official in a region - the regional head, who used to remain busy with other routines. Hence, the process of issuing RCMC gets delayed. In the absence of a time frame the officials processing the documents were not bothered about delay.

Issuance of RCMC was an important task assigned to FIEO, so the process was rejuvenated to implement ISO system. Each step in the process of issuing RCMC and scrutiny of documents was well documented. Unwanted validations were removed. The authority for approval was extended to multiple officials. Time norms were set to ensure that RCMCs get issued in maximum three days time across all FIEO offices. The time period is well adhered to and further planned to be reduced further. With ISO system, despite huge case load, RCMC is now possible on the same day.

As the system is under constant watch whenever any deviation in the system is noticed same get enrolled through intervention by the management. Using measurement processes, officials are now aware how to deliver the services in the stipulated time to the customer satisfaction.

G.P. Upadhyaya
Secretary General
FIEO, New Delhi